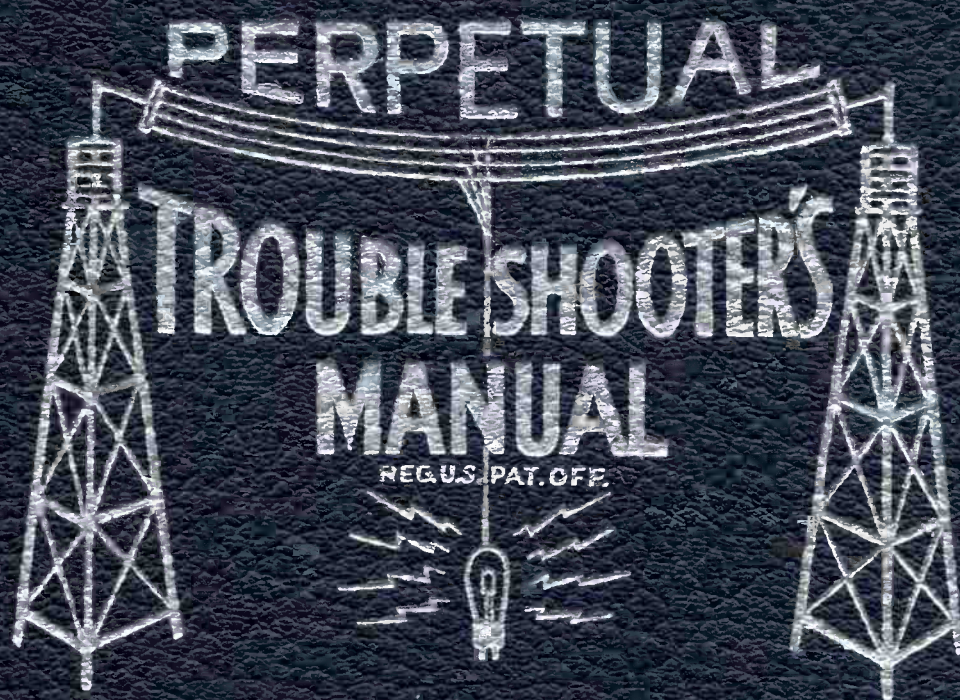


VOLUME X



JOHN F. RIDER





MODELS B30, B32

Alignment Resistances

LAFAYETTE RADIO MFG. CO.

D. C. Resistance of Windings

Part No.	Antenna, R. F. Transformer, Winding	Resistance in Ohms
P-9A418	Antenna R. F. Transformer	21.4
	Range B Primary Winding	0.3
	Range C Primary Winding	6.1
	Range B Secondary Winding	2.1
	Range C Secondary Winding	Small
P-9A41	1st Interstage R. F. Transformer	3.6
	Range B Primary Winding	2.4
	Range C Primary Winding	0.5
	Range B Secondary Winding	3.8
	Range C Secondary Winding	Small
P-9A424	Audio Input Transformer	415.0
	Primary Winding	201.7
	Center Tap to Inside	135.5
	Center Tap to Outside	288.5
P-31N26	Audio Output Transformer	135.5
	Primary Winding	153.5
	Center Tap to Inside	0.16
	Center Tap to Outside	0.12
P-31N22	Power Transformer (115 Volt-60 Cycle)	1.7
	Primary Winding	Small
	Tube Filament Secondary (A-A)	Small
	High Voltage Secondary (B-B) (80)	97.9
	Center Tap to Outside	106.4
P-9A427	Oscillator Coils	3.1
	Range B Grid Coil	0.7
	Red White Tap to White	1.7
	Range C Grid Coil	0.5
	Green White Tap to Green	Small
	Range D Grid Coil	0.2
	Black White Tap to Black	Small
	Oscillator Plate Coil	34.7
P-9A408	2nd I. F. Plate Isolating Resistor	640.0
P-12A304	12" Dynamic Speaker (No. 1-See Fig. 1)	1.0
	Speaker Field	Small
P-12A305	12" Dynamic Speaker (No. 2-See Fig. 2)	1.0
	Speaker Field	Small
P-12A326	12" Dynamic Speaker (No. 3-See Fig. 3)	1.0
	Speaker Field	Small
P-9A409	Resistor Assembly	1.5
P-9A430	Hit F. Oscillator Tracking Coil	1.0
P-9A412	2nd Interstage R. F. Coils	2.3
	Range B Section	0.2
	Long Portion	1.8
	Short Portion	0.2
P-9A413	1st Primary Winding	4.4
	Coupling Winding	0.3
	Secondary Winding	2.3
	Tap to Switch Side	2.3
P-9A414	2nd I. F. Transformer	4.3
	Primary Winding	0.3
	Secondary Winding	2.3
	Tap to Condenser Side	2.3
P-9A415	3rd I. F. Transformer	9.8
	Primary Winding	30.0
	Secondary Winding	

Alignment and Calibration

Correct alignment is extremely important in connection with all wave receivers. The receivers are all properly aligned at the factory with precision instruments and realignment should not be attempted unless all other possible causes of the faulty operation have first been investigated and unless the service technician has the proper equipment.

A signal generator that will provide an accurately calibrated signal at 476, 1730, 1500, 600, 5800, 5000, 18,300, 15,000 and 6000 KC and an output indicating meter are required. It will be practically impossible to align the receiver if unsatisfactory apparatus is used. If a station is tuned in with the selectivity control in the broad position and this control is then turned to the sharp position, the station may disappear. This is not an indication that the receiver is out of alignment.

Use a non-metallic screwdriver for the adjustments. The complete procedure is as follows:

I. F. Adjustment

Set the signal generator for a signal of 456 KC. Connect the output of the signal generator to the grid of the 1st detector through a 0.1 MF condenser.

Connect the ground lead of the receiver to the ground post of the signal generator.

Turn the band selector to the Range B position (standard wave band—purple dial color).

Turn the selectivity control to the sharp position and keep it in this position for all adjustments.

Turn the volume control to the maximum position. Attenuate the signal from the signal generator to prevent the levelling-off action of the A.V.C.

Then adjust the five I.F. trimmers until maximum output is obtained. The adjusting screws for these condensers are reached from the top of the chassis, and the location is shown in Fig. 5.

Range B Alignment

1730 KC Adjustment

Set the signal generator for 1730 KC. Turn the rotor of the tuning condenser to the full open position.

Keep the band selector in the standard wave position.

Connect the antenna lead of the receiver through a 200 mmf. condenser to the output of the signal generator.

For this and all subsequent adjustments keep the volume control at the maximum position and attenuate the signal from the signal generator to prevent A.V.C. action.

Adjust the oscillator Range B trimmer (C3.8) until maximum output is obtained. The location of this trimmer is shown in Fig. 3.

1500 KC Adjustment

Set the signal generator for 1500 KC. Turn the rotor of the tuning condenser carefully until maximum output is obtained.

Loosen the pointer set screw and set the large pointer at the 1500 KC mark on the standard wave band scale. Retighten the set screw.

Adjust the 1st and 2nd interstage Range B trimmers (C8 and C13) and antenna Range B trimmer (C2) to maximum.

Do not change the setting of the oscillator Range B trimmer.

600 KC Adjustment

Set the signal generator for 600 KC. Turn the tuning condenser rotor until maximum output is obtained.

Turn the rotor slowly back and forth at the same time adjusting the 600 KC trimmer until the peak of greatest intensity is obtained. See Fig. 3 for location of this trimmer.

Be sure to use a non-metallic screwdriver for this adjustment.

Range C Alignment

5800 KC Adjustment

Set the signal generator for 5800 KC.

Connect the antenna lead of the receiver through a 400 ohm resistor to the output of the signal generator.

Turn the rotor of the tuning condenser to the full open position.

(1st short wave band—green dial color).

As mentioned above, keep the volume control at the maximum position and attenuate the signal from the signal generator to prevent A.V.C. action.

Adjust the oscillator Range C trimmer (C40) until maximum output is obtained. See Fig. 3 for location of this trimmer.

5000 KC Adjustment

Set the signal generator for 5000 KC. Turn the rotor of the tuning condenser carefully until maximum output is obtained.

Adjust the 1st and 2nd interstage Range C trimmers (C9 and C12) and antenna Range C trimmer (C3) to maximum.

Do not change the setting of the oscillator Range C trimmer.

Range D Alignment

18,300 KC Adjustment

Set the signal generator for 18,300 KC. Keep the antenna lead of the receiver connected through the 400 ohm resistor to the output of the signal generator.

Turn the rotor of the tuning condenser to the full open position.

Turn the band selector to the Range D position (2nd short wave band—red dial color).

As mentioned above, keep the volume control at the maximum position and attenuate the signal from the signal generator to prevent A.V.C. action.

Adjust the oscillator Range D trimmer (C41) until maximum output is obtained. See Fig. 3 for location of this trimmer.

15,000 KC Adjustment

Set the signal generator for 15,000 KC.

Turn the rotor of the tuning condenser carefully until maximum output is obtained.

Adjust the 1st and 2nd interstage Range D trimmers (C10 and C11) and antenna Range D trimmer (C4) to maximum.

When adjusting the 2nd interstage Range D trimmer, it will be necessary at the same time to turn the tuning condenser rotor slowly back and forth until the peak of greatest intensity is obtained.

Then go back and repeat the procedure as given for the 18,300 KC adjustment. If it is found necessary to make any appreciable change in the setting of the oscillator Range D trimmer, the 15,000 KC adjustment must be repeated.

Do not make any further change in the setting of the oscillator Range D trimmer.

6000 KC Adjustment

Set the signal generator for 6000 KC.

Turn the tuning condenser rotor until maximum output is obtained.

Turn the rotor slowly back and forth at the same time adjusting the 6000 KC trimmer until the peak of greatest intensity is obtained. See Fig. 3 for location of this trimmer.

Use a non-metallic screwdriver for this adjustment.

Twenty-five Cycle Receivers

The twenty-five cycle receiver differs from the sixty cycle receiver only in the fact that a different power transformer is used. The correct power transformer is shown in the parts list.

The twenty-five cycle receiver can be operated satisfactorily from a sixty cycle power supply. However, the reverse is not true, the sixty cycle receiver cannot be operated from a twenty-five cycle power supply.

A 115-230 Volt, 40 to 60 cycle as well as other power transformers with special power ratings are also available for this model.

LAFAYETTE RADIO MFG. CO.

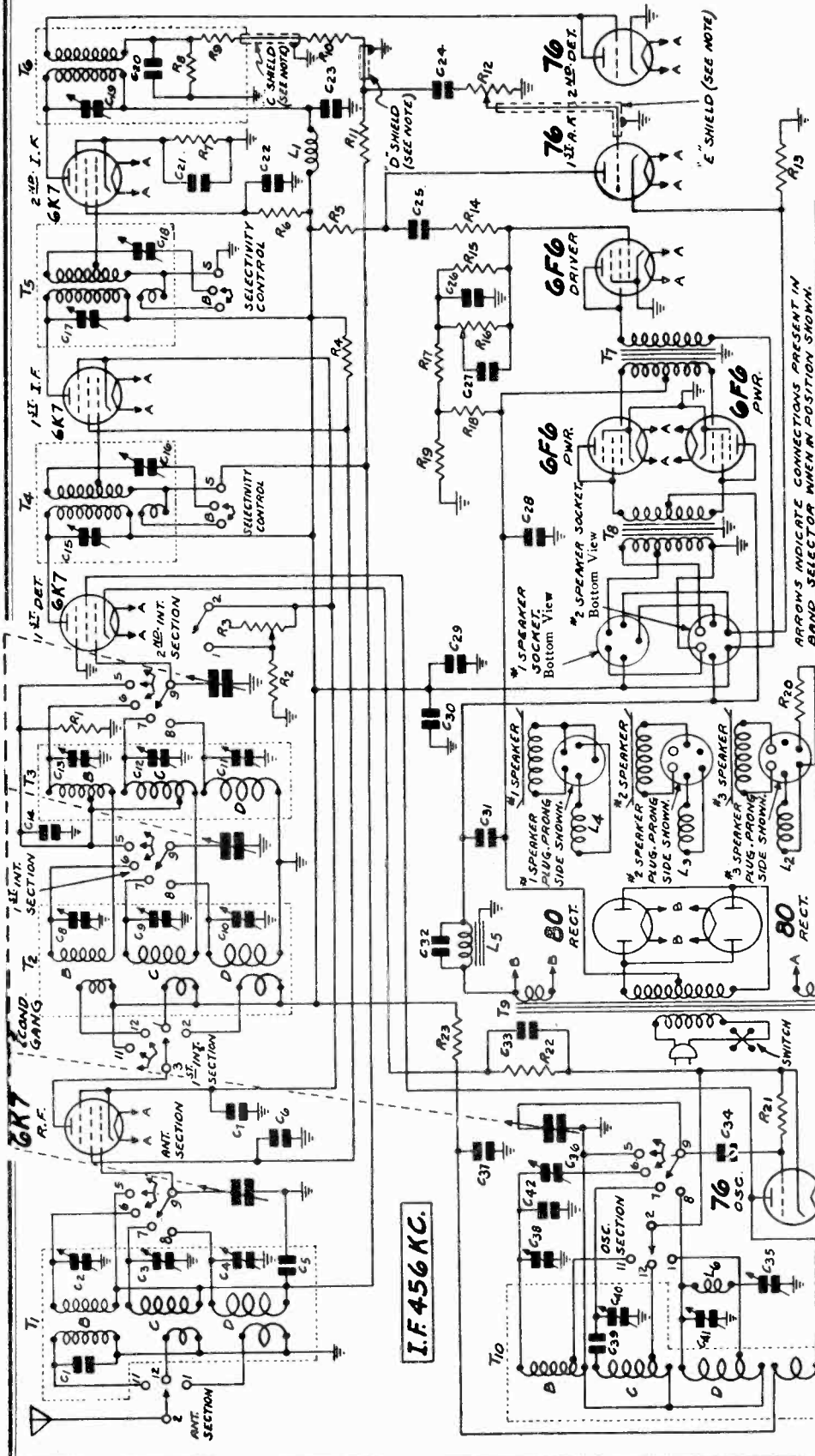
MODELS B30, B32

Schematic

Power Consumption - 140 Watts (At 115 volts 60 cycles)  
 Power Output - - - - - 15 Watts Undistorted

Tuning Frequency Range

B Range . . . . . 535 to 1730 KC.  
 C Range . . . . . 1715 to 5800 KC.  
 D Range . . . . . 5750 to 18300 KC.



October, 1935

ARROWS INDICATE CONNECTIONS PRESENT IN POSITION 3 SHORT WAVE (D)

POSITION 1	POSITION 2	POSITION 3
STANDARD WAVE (B)	SHORT WAVE (C)	SHORT WAVE (D)
OSC. AND ANT. SECTION	11 12 1 2 3 5 6 7 8 9	11 12 1 2 3 5 6 7 8 9
2ND INT. SECTION	1 2	5 6 7 8 9
1ST INT. SECTION	11 12 1 2 3 5 6 7 8 9	11 12 1 2 3 5 6 7 8 9

- CONTRACT LOCATIONS 3, 4 AND 10 OSC. AND ANT. SECTIONS, 3, 4, 10, 11 AND 12 IN 2ND INT. SECTION AND 4 AND 10 IN 1ST INT. SECTION ARE BLANK.
- T 6 3rd I.F. Trans.
  - T 7 Push-Pull Input Trans.
  - T 8 Push-Pull Output Trans.
  - T 9 Power Trans.
  - T 10 Osc. Inductors
  - L 1 2nd I.F. Plate Isolating Reactor
  - L 2 No. 3 Speaker Field (1000 ohm)
  - L 3 No. 2 Speaker Field (1000 ohm)
  - L 4 No. 1 Speaker Field (6400 ohm)
  - L 5 Choke Coil
  - L 6 Osc. Transformer Coil
  - R 5 60,000 ohm 0.5 watt
  - R 6 100,000 ohm 0.5 watt
  - R 7 500 ohm 0.2 watt
  - R 8 200,000 ohm 0.2 watt
  - R 9 100,000 ohm 0.2 watt
  - R 10 100,000 ohm 0.2 watt
  - R 11 2.0 megohm 0.2 watt
  - R 12 200 ohm 0.5 watt
  - R 13 250,000 ohm 0.2 watt
  - R 14 250,000 ohm 0.2 watt
  - R 15 250,000 ohm 0.2 watt
  - R 16 30 megohm Control
  - R 17 100,000 ohm 0.2 watt
  - R 18 128 ohm 2.5 watt
  - R 19 145 ohm 3.0 watt
  - R 20 780 ohm 12.0 watt
  - R 21 80,000 ohm 0.2 watt
  - R 22 2,500 ohm 0.2 watt
  - R 23 27,000 ohm 1.0 watt
  - T 1 Ant. R.F. Trans.
  - T 2 1st Interstage R.F. Trans.
  - T 3 2nd Interstage R.F. Trans.
  - T 4 1st I.F. Trans.
  - T 5 2nd I.F. Trans.

GROUPS OF CIRCUIT ELEMENTS ENCLOSED IN DOTTED RECTANGLES COMPRISE DISTINCT MECHANICAL ASSEMBLIES. "B" AND "S" ON SELECTIVITY CONTROL DENOTES BROAD AND "SHARP" RESPECTIVELY OF THE "C" SHIELD IS 20 mm. f.p. THE CAPACITY OF THE "C" SHIELD IS 15 to 20 p.f. THE CAPACITY OF THE "E" SHIELD IS 10 to 15 p.f. THE CAPACITY OF THE "F" SHIELD IS 10 to 15 p.f. ON SETS USING TWO SPEAKERS THE #1 AND #2 SPEAKERS ARE FURNISHED.

- C 1 250 mmf.
- C 2 2-25 mmf.
- C 3 2-25 mmf.
- C 4 .05 mf. 180 V.
- C 5 .05 mf. 180 V.
- C 6 .05 mf. 180 V.
- C 7 .70 mf. 360 V.
- C 8 .70 mf. 360 V.
- C 9 .70 mf. 360 V.
- C 10 .70 mf. 360 V.
- C 11 .15 mf. 180 V.
- C 12 .15 mf. 180 V.
- C 13 .15 mf. 180 V.
- C 14 .15 mf. 180 V.
- C 15 .15 mf. 180 V.
- C 16 .15 mf. 180 V.
- C 17 .15 mf. 180 V.
- C 18 .15 mf. 180 V.
- C 19 .15 mf. 180 V.
- C 20 .15 mf. 180 V.
- C 21 .05 mf. 180 V.
- C 22 .05 mf. 180 V.
- C 23 .05 mf. 180 V.
- C 24 .05 mf. 180 V.
- C 25 .05 mf. 180 V.
- C 26 .05 mf. 180 V.
- C 27 .05 mf. 180 V.
- C 28 .05 mf. 180 V.
- C 29 .05 mf. 180 V.
- C 30 .05 mf. 180 V.
- C 31 .05 mf. 180 V.
- C 32 .05 mf. 180 V.
- C 33 .05 mf. 180 V.
- C 34 .05 mf. 180 V.
- C 35 .05 mf. 180 V.
- C 36 .05 mf. 180 V.
- C 37 .05 mf. 180 V.
- C 38 .05 mf. 180 V.
- C 39 .05 mf. 180 V.
- C 40 .05 mf. 180 V.
- C 41 .05 mf. 180 V.
- C 42 .05 mf. 180 V.
- C 43 .05 mf. 180 V.
- C 44 .05 mf. 180 V.
- C 45 .05 mf. 180 V.
- C 46 .05 mf. 180 V.
- C 47 .05 mf. 180 V.
- C 48 .05 mf. 180 V.
- C 49 .05 mf. 180 V.
- C 50 .05 mf. 180 V.
- C 51 .05 mf. 180 V.
- C 52 .05 mf. 180 V.
- C 53 .05 mf. 180 V.
- C 54 .05 mf. 180 V.
- C 55 .05 mf. 180 V.
- C 56 .05 mf. 180 V.
- C 57 .05 mf. 180 V.
- C 58 .05 mf. 180 V.
- C 59 .05 mf. 180 V.
- C 60 .05 mf. 180 V.
- C 61 .05 mf. 180 V.
- C 62 .05 mf. 180 V.
- C 63 .05 mf. 180 V.
- C 64 .05 mf. 180 V.
- C 65 .05 mf. 180 V.
- C 66 .05 mf. 180 V.
- C 67 .05 mf. 180 V.
- C 68 .05 mf. 180 V.
- C 69 .05 mf. 180 V.
- C 70 .05 mf. 180 V.
- C 71 .05 mf. 180 V.
- C 72 .05 mf. 180 V.
- C 73 .05 mf. 180 V.
- C 74 .05 mf. 180 V.
- C 75 .05 mf. 180 V.
- C 76 .05 mf. 180 V.
- C 77 .05 mf. 180 V.
- C 78 .05 mf. 180 V.
- C 79 .05 mf. 180 V.
- C 80 .05 mf. 180 V.
- C 81 .05 mf. 180 V.
- C 82 .05 mf. 180 V.
- C 83 .05 mf. 180 V.
- C 84 .05 mf. 180 V.
- C 85 .05 mf. 180 V.
- C 86 .05 mf. 180 V.
- C 87 .05 mf. 180 V.
- C 88 .05 mf. 180 V.
- C 89 .05 mf. 180 V.
- C 90 .05 mf. 180 V.
- C 91 .05 mf. 180 V.
- C 92 .05 mf. 180 V.
- C 93 .05 mf. 180 V.
- C 94 .05 mf. 180 V.
- C 95 .05 mf. 180 V.
- C 96 .05 mf. 180 V.
- C 97 .05 mf. 180 V.
- C 98 .05 mf. 180 V.
- C 99 .05 mf. 180 V.
- C 100 .05 mf. 180 V.

MODELS B30, B32  
Voltage, Socket, Coils  
Trimmers, Phono, Data

LAFAYETTE RADIO MFG. CO.

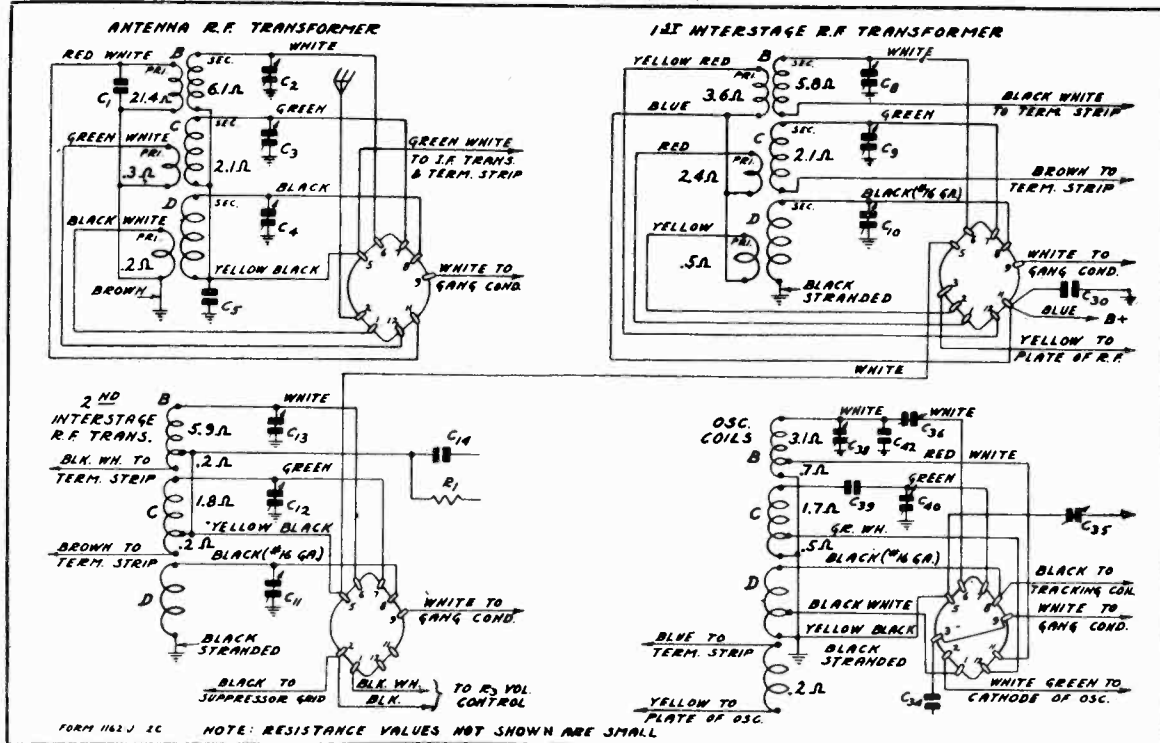


Fig. 4—Color Coding of Coil Wires and D. C. Resistance of Windings. (Also see complete D. C. Resistance List)

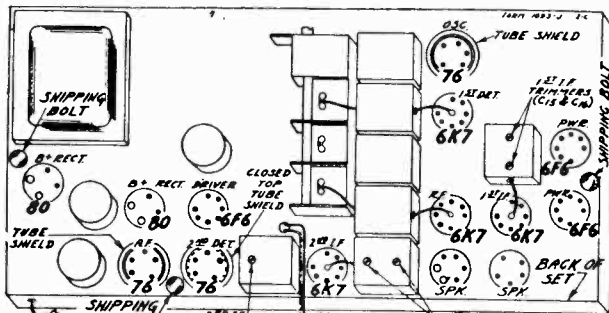


Fig. 5—Location of Tubes

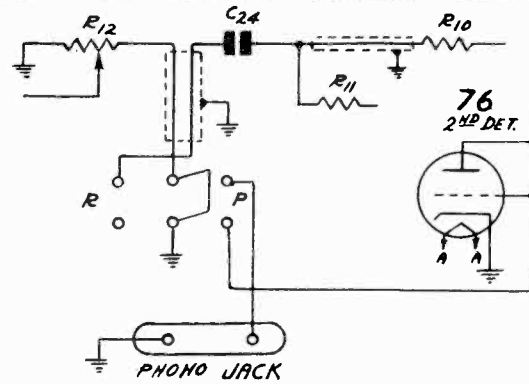
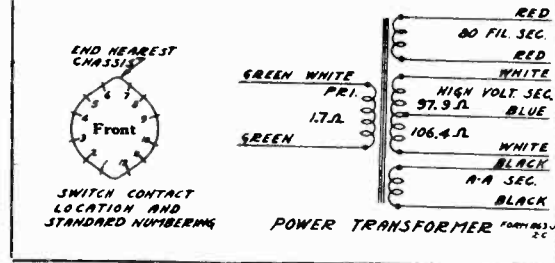


Fig. 7—Phonograph Connections

VOLTAGES AT SOCKETS  
Line Voltage 115 - Antenna Shorted to Ground  
Volume Control at Maximum

Tube	Function	Across Heater	Plate to Ground	Screen to Ground	Cath. to Ground	Cath. M. A.
6K7	R. F.	6.2	245	80	2.8	7.6
6K7	1st Det.	6.2	245	90	6.5	2.6
76	Osc.	6.2	90			5.3
6K7	1st I. F.	6.2	245	80	2.8	7.6
6K7	2nd I. F.	6.2	245	74	3.9	7.0
76	2nd Det.	6.2				
76	1st A. F.	6.2	110		5.6	2.1
6F6	Driver	6.2	235	230	20.0(1)	27.0
6F6	Power	6.2	345	345	38.0(2)	22.5
80	Rectifier	5.1	500(3)			140.0(4)

(1) As read across R19 (3) Plate to Center Tap  
(2) Grid to Ground (4) Two tubes in parallel

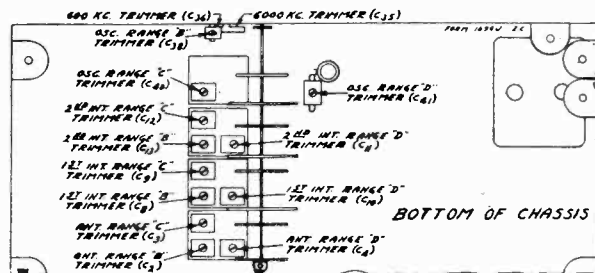


Fig. 3—Location of Trimmers

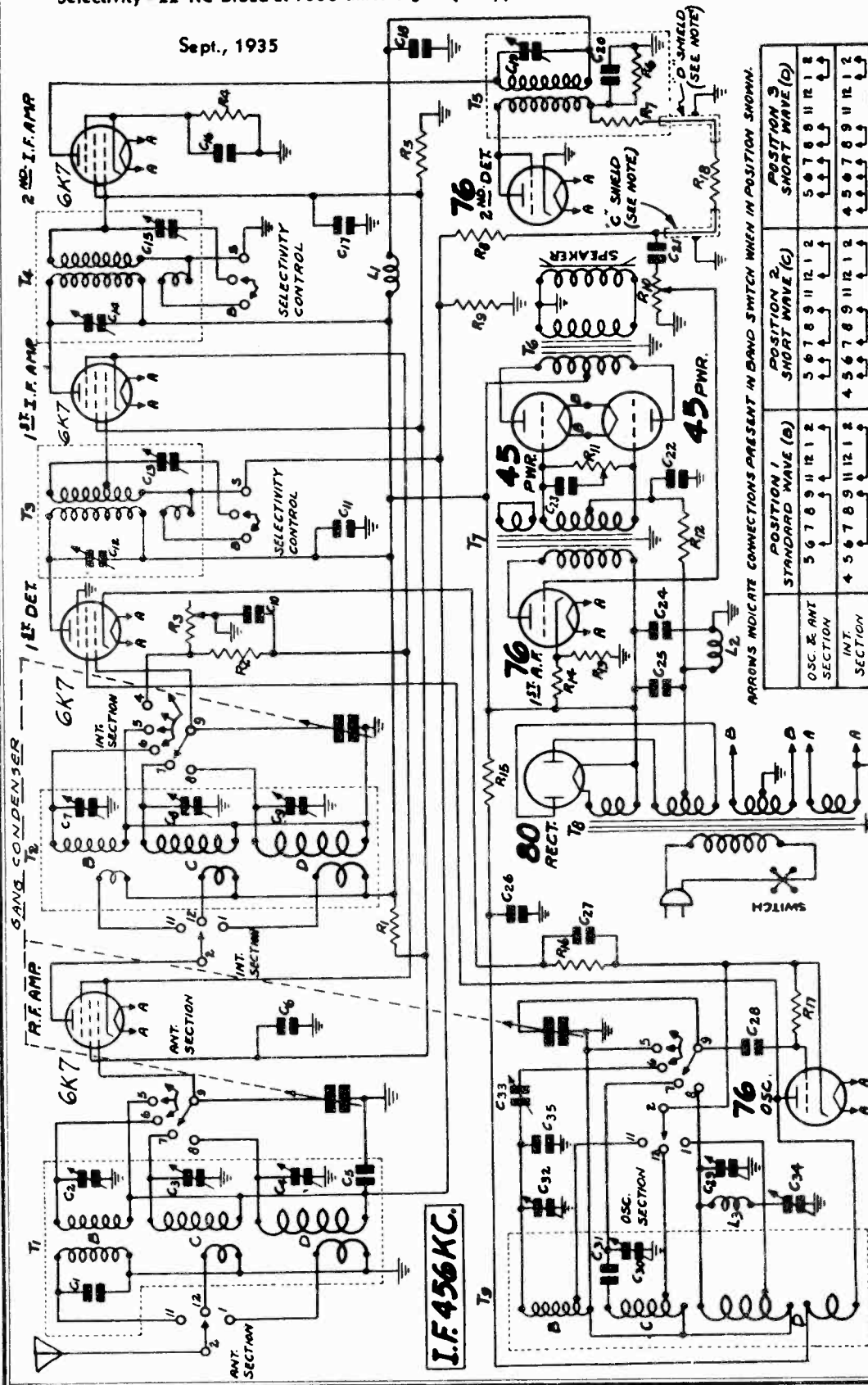
LAFAYETTE RADIO MFG. CO.

MODELS B35, B36  
Schematic

Power Consumption - 90 Watts (At 115 volts 60 cycles)  
Power Output - - - - - 5 Watts Undistorted  
Selectivity - 22 KC Broad at 1000 times Signal (Sharp)

Tuning Frequency Range  
B Range . . . . . 535 to 1730 KC.  
C Range . . . . . 1715 to 5800 KC.  
D Range . . . . . 5750 to 18300 KC.

Sept., 1935



ARROWS INDICATE CONNECTIONS PRESENT IN BAND SWITCH WHEN IN POSITION SHOWN.

	POSITION 1 STANDARD WAVE (A)	POSITION 2 SHORT WAVE (C)	POSITION 3 SHORT WAVE (D)
OSC. & ANT SECTION	5 6 7 8 9 11 12 2	5 6 7 8 9 11 12 2	5 6 7 8 9 11 12 2
INT. SECTION	4 5 6 7 8 9 11 12 2	4 5 6 7 8 9 11 12 2	4 5 6 7 8 9 11 12 2

CONTACT LOCATIONS 3, 4 AND 10 IN OSC. AND ANT SECTIONS, AND 3 AND 10 IN INT. SECTION ARE BLANK.

- GROUPS OF CIRCUIT ELEMENTS ENCLOSED IN DOTTED RECTANGLES COMPRISE DISTINCT MECHANICAL ASSEMBLIES. "A" AND "B" ON SELECTIVITY CONTROL DENOTES BROAD AND SHARP RESPECTIVELY. THE CAPACITY OF THE "C" SHIELD IS 55 μF. THE CAPACITY OF THE "D" SHIELD IS 20 μF.
- C 1 350 mmf.
  - C 2 2-25 mmf.
  - C 3 2-25 mmf.
  - C 4 2-25 mmf.
  - C 5 .05 mf. 180 V.
  - C 6 .25 mf. 180 V.
  - C 7 2-25 mmf.
  - C 8 2-25 mmf.
  - C 9 8-25 mmf.
  - C 10 .25 mf. 180 V.
  - C 11 25 mf. 360 V.
  - C 12 150-250 mmf. ONE UNIT
  - C 13 150-250 mmf. ONE UNIT
  - C 14 150-250 mmf. ONE UNIT
  - C 15 150-250 mmf. ONE UNIT
  - C 16 .05 mf. 180 V.
  - C 17 4.0 mf. 150 V.
  - C 18 10 mf. 360 V.
  - C 19 70-150 mmf.
  - C 20 50 mmf.
  - C 21 .01 mf. 360 V.
  - C 22 .30 mf. 180 V.
  - C 23 .04 mf. 600 V.
  - C 24 18.0 mf. 290 V.
  - C 25 14.0 mf. 360 V.
  - C 26 .05 mf. 180 V.
  - C 27 .05 mf. 180 V.
  - C 28 35 mmf.
  - C 29 2-25 mmf.
  - C 30 2-25 mmf.
  - C 31 1400 mmf.
  - C 32 2-25 mmf.
  - C 33 300-600 mmf. ONE UNIT
  - C 34 40-100 mmf.
  - R 1 16,000 ohm 2.0 W.
  - R 2 150 ohm 2 W.
  - R 3 2,500 ohm Dual Volume Control
  - R 4 400 ohm 2 W.
  - R 5 30,000 ohm 1.0 W.
  - R 6 300,000 ohm 2 W.
  - R 7 100,000 ohm 2 W.
  - R 8 2.0 megohm 2 W.
  - R 9 1.0 megohm 2 W.
  - R 10 3.0 megohm Tone Cont.
  - R 11 100,000 ohm 2 W.
  - R 12 1,000 ohm 2 W.
  - R 13 1,000 ohm 2 W.
  - R 14 25,000 ohm 3.0 W.
  - R 15 25,000 ohm 1.0 W.
  - R 16 2,500 ohm 2 W.
  - R 17 80,000 ohm 2 W.
  - T 1 Ant. R.F. Trans.
  - T 2 Interstage R.F. Trans.
  - T 3 1st I.F. Trans.
  - T 4 2nd I.F. Trans.
  - T 5 Diode Input Trans.
  - T 6 Audio Input Trans.
  - T 7 Audio Input Trans.
  - T 8 Power Trans.
  - T 9 Osc. Inductors
  - L 1 Isolating Reactor (570 Ohm)
  - L 2 Speaker Field (570 Ohm)
  - L 3 Osc. Tracking Coil



MODELS B35, B36  
Voltage, Socket, Coils  
Trimmers, Phono. Data

LAFAYETTE RADIO MFG. CO.

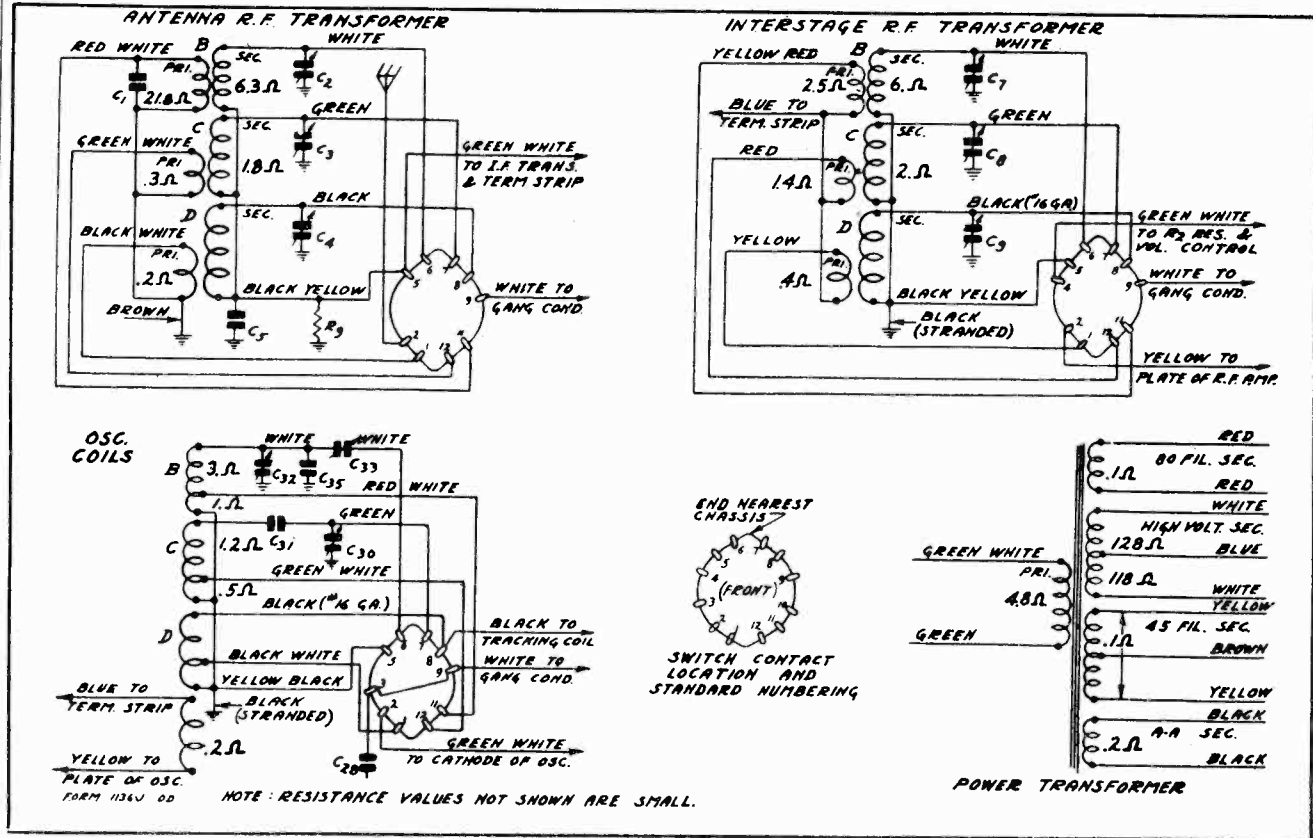


Fig. 4—Color Coding of Coil Wires and D. C. Resistance of Windings (Also see complete D. C. Resistance List in this Manual)

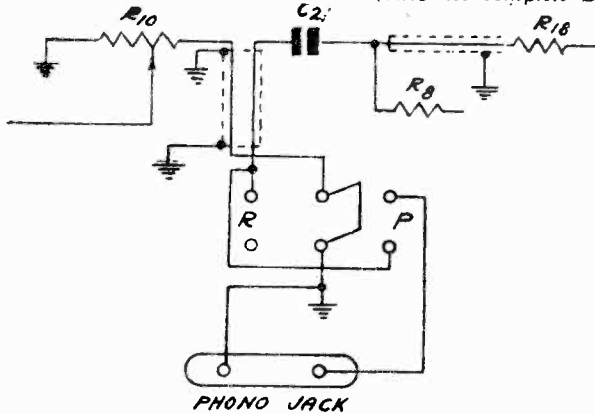


Fig. 7—Phonograph Connections

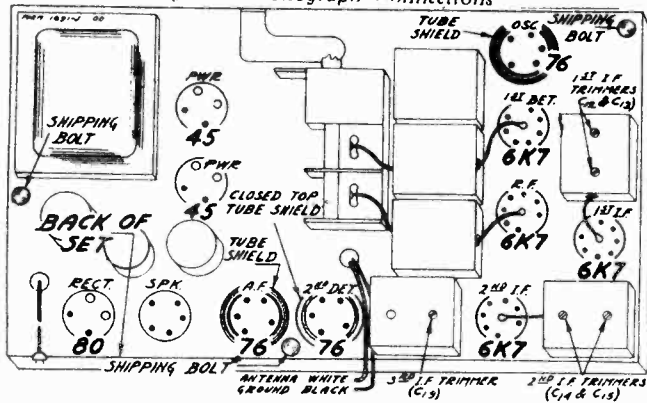


Fig. 5—Location of Tubes

**VOLTAGES AT SOCKETS**  
 Line Voltage, 115 - Volume Control at Maximum  
 Antenna Shorted to Ground

Type of Tube	Function	Heater or Filam't	Plate to Ground	Screen to Ground	Cathode to Ground	Cathode M. A.
6K7 (6D6)	R. F.	6.1	265	120	3.7	9.0
6K7 (6D6)	1st Det.	6.1	265	110	9.5	3.8
76	Osc.	6.1	110			5.8
6K7 (6D6)	1st. I. F.	6.1	265	120	3.7	9.0
6K7 (6D6)	2nd I. F.	6.1	265	120	3.7	9.0
76	2nd Det.	6.1				
76	1st A. F.	6.1	265		14.	5.0
45	Power	2.5	265		50.(1)	22.
80	Rectifier	4.9				90. (total)

(1) As-read with 500 Volt Scale. Grid to Ground.

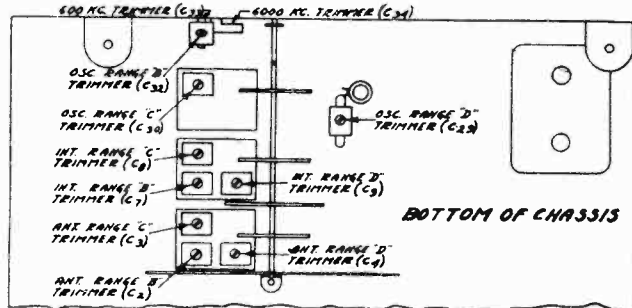


Fig. 3—Location of Trimmers

# LAFAYETTE RADIO MFG. CO.

MODELS B35, B36  
Alignment, Changes  
DC Resistances

## Alignment and Calibration

Correct alignment is extremely important in connection with all wave receivers. The receivers are all properly aligned at the factory with precision instruments and realignment should not be attempted unless all other possible causes of the faulty operation have first been investigated and unless the service technician has the proper equipment.

A signal generator that will provide an accurately calibrated signal at 476, 1730, 1700, 600, 5800, 1000, 18,400, 15,000 and 6000 KC and an output indicating meter are required. It will be practically impossible to align the receiver if unsatisfactory apparatus is used. If a station is tuned in with the selectivity control in the broad position and this control is then turned to the sharp position, the station may disappear. This is not an indication that the receiver is out of alignment.

Use a non-metallic screwdriver for the adjustments. The complete procedure is as follows:

### I. F. Adjustment

Set the signal generator for a signal of 476 KC. Connect the output of the signal generator through a 0.1 mf. condenser to the grid of the 1st detector.

Connect the ground lead of the receiver to the ground post of the signal generator.

Turn the band selector to the Range B position (standard wave band—purple dial color). Turn the selectivity control to the sharp position and keep it in this position for all adjustments.

Turn the volume control to the maximum position. Attenuate the signal from the signal generator to prevent the levelling-off action of the A.V.C.

Then, adjust the five I.F. trimmers until maximum output is obtained. The adjusting screws for these condensers are reached from the top of the chassis, and the location is shown in Fig. 5.

### Range B Adjustment

**1730 KC Adjustment**

Set the signal generator for 1730 KC. Turn the rotor of the tuning condenser to the full open position.

Keep the band selector in the standard wave position. Connect the antenna lead of the receiver through a 200 mmf. condenser to the output of the signal generator.

For this and all subsequent adjustments keep the volume control at the maximum position and attenuate the signal from the signal generator to prevent A.V.C. action.

Adjust the oscillator Range B trimmer (C12) until maximum output is obtained. The location of this trimmer is shown in Fig. 3.

### 1500 KC Adjustment

Set the signal generator for 1500 KC. Turn the rotor of the tuning condenser carefully until maximum output

Loosen the pointer set screw and set the large pointer at the 1500 KC mark on the standard wave band scale. Retighten the set screw.

Adjust the interstage Range B trimmer (C7) and antenna Range B trimmer (C3) to maximum.

Do not change the setting of the oscillator Range B trimmer.

### 600 KC Adjustment

Set the signal generator for 600 KC.

Turn the tuning condenser rotor until maximum output is obtained.

Turn the rotor slowly back and forth at the same time adjusting the 600 KC trimmer until the peak of greatest intensity is obtained. See Fig. 3 for location of this trimmer.

### Range C Alignment

#### 5800 KC Adjustment

Set the signal generator for 5800 KC.

Connect the antenna lead of the receiver through a 400 ohm resistor to the output of the signal generator.

Turn the rotor of the tuning condenser to the full open position.

Turn the band selector to the Range C position (1st short wave band—green dial color).

Adjust the oscillator Range C trimmer (C30) until maximum output is obtained. See Fig. 3 for location of this trimmer.

#### 5000 KC Adjustment

Set the signal generator for 5000 KC.

Turn the rotor of the tuning condenser carefully until maximum output is obtained.

Adjust the interstage Range C trimmer (C8) and antenna Range C trimmer (C3) to maximum.

Do not change the setting of the oscillator Range C trimmer.

#### Range D Adjustment

##### 18,300 KC Adjustment

Set the signal generator for 18,300 KC.

Keep the antenna lead of the receiver connected through the 400 ohm resistor to the output of the signal generator.

Turn the rotor of the tuning condenser to the full open position.

Turn the band selector to the Range D position (2nd short wave band—red dial color).

Adjust the oscillator Range D trimmer (C29) until maximum output is obtained. See Fig. 3 for location of this trimmer.

##### 15,000 KC Adjustment

Set the signal generator for 15,000 KC.

Turn the rotor of the tuning condenser carefully until maximum output is obtained.

Adjust the interstage Range D trimmer (C9) and antenna Range D trimmer (C4) to maximum.

When adjusting the interstage Range D trimmer, it will be necessary at the same time to turn the tuning condenser rotor slowly back and forth until the peak of greatest intensity is obtained.

Then go back and repeat the procedure as given for the 18,300 KC adjustment. If it is found necessary to make any appreciable change in the setting of the oscillator Range D trimmer, the 15,000 KC adjustment must be repeated.

Do not make any further change in the setting of the oscillator Range D trimmer.

### 6000 KC Adjustment

Set the signal generator for 6000 KC.

Turn the tuning condenser rotor until maximum output is obtained.

Turn the rotor slowly back and forth at the same time adjusting the 6000 KC trimmer until the peak of greatest intensity is obtained. See Fig. 3 for location of this trimmer.

### D. C. Resistance of Windings

Refer to Fig. 4. Following are the D. C. resistances of the various windings in the chassis. They should be below will vary slightly in different sets.

Part No.	Winding	Code	D. C. Resistance in Ohms
P-9A45	Antenna K. F. Transformer	T1	2.5
	Range B Primary Winding		0.2
	Range B Secondary Winding		0.2
	Range C Primary Winding		6.3
	Range C Secondary Winding		Small
	Range D Primary Winding	T2	2.5
P-9A45	Interstage K. F. Transformer		1.4
	Range B Primary Winding		0.4
	Range B Secondary Winding		2.0
	Range C Primary Winding		2.0
	Range C Secondary Winding		Small
P-9A46	Oscillator Coil, Col	T3	4.6
	Red White Tap to White		3.0
	Red White Tap to Ground		1.0
	Green White Tap to Green		1.2
	Green White Tap to Ground		0.5
	Black White Tap to Black		0.5
	Black White Tap to Ground		Small
	Other Taps to Ground		0.2
P-9A47	1st I. F. Transformer	T3	4.6
	Primary Winding		4.6
	Secondary Winding		1.7
	Short Section		3.4
	Center Tap to Inside		0.2
P-9A48	2nd I. F. Transformer	T4	9.4
	Primary Winding		9.4
	Secondary Winding		0.5
P-9A49	3rd I. F. Transformer	T5	18.2
	Primary Winding		18.2
P-9A16	Audio Input Transformer	T7	28.4
	Primary Winding		28.4
P-51A12	Audio Output Transformer	T6	23.0
	Center Tap to Inside		2000
	Center Tap to Outside		2690
	Center Tap to Inside		198
	Center Tap to Outside		274
P-12A20	Dynamic Speaker (10")		1.6
	Speaker Voice Coil		570
P-53A34	115 Volt 60 Cycle Power Transformer	T8	4.3
	Primary Winding		4.3
	Secondary (A, A)		0.1
	Tube Filament Secondary (B, B)		0.1
	Rectifier Filament Secondary		118
	High Voltage Secondary Winding		1.8
	Center Tap to Outside		36
P-9A49	2nd I. F. Plate Isolating Reactor	L1	1.2
P-9A30	High Frequency Oscillator Tracking Coil	L3	

**Twenty-five Cycle Receivers**  
The twenty-five cycle receiver differs from the sixty cycle receiver only in the fact that a different power transformer is used. The correct power transformer is shown in the parts list.

The twenty-five cycle receiver can be operated satisfactorily from a sixty cycle power supply. However, the reverse is not true, the sixty cycle receiver cannot be operated from a twenty-five cycle power supply.

A 115-230 Volt, 40 to 60 cycle as well as other power transformers with special power ratings are also available for this model.

### Changes in Early Models

In the early models of this receiver the tone control resistor (R11) was connected as a series variable resistor connecting in series through the condenser C33 between the grids of the 45 tubes in the audio output stage. In the later models it is employed as a potentiometer in the manner shown in Fig. 2.

The 100,000 ohm resistor (R18) was not used in the early models. Condenser C21 was connected directly to resistor R7.

The type 6K7 metal tubes replace the type 6D6 glass tubes which were used in the early models.

Condenser C35 was added to the oscillator coil standard wave section in later models. It is not, however, used in all cases but only when this capacity is required in this circuit.

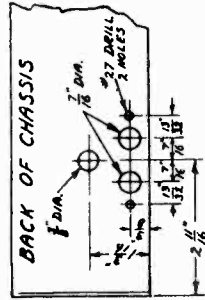


Fig. 8—Details of Panel Drilling for Phono Assembly

### Phonograph Connections

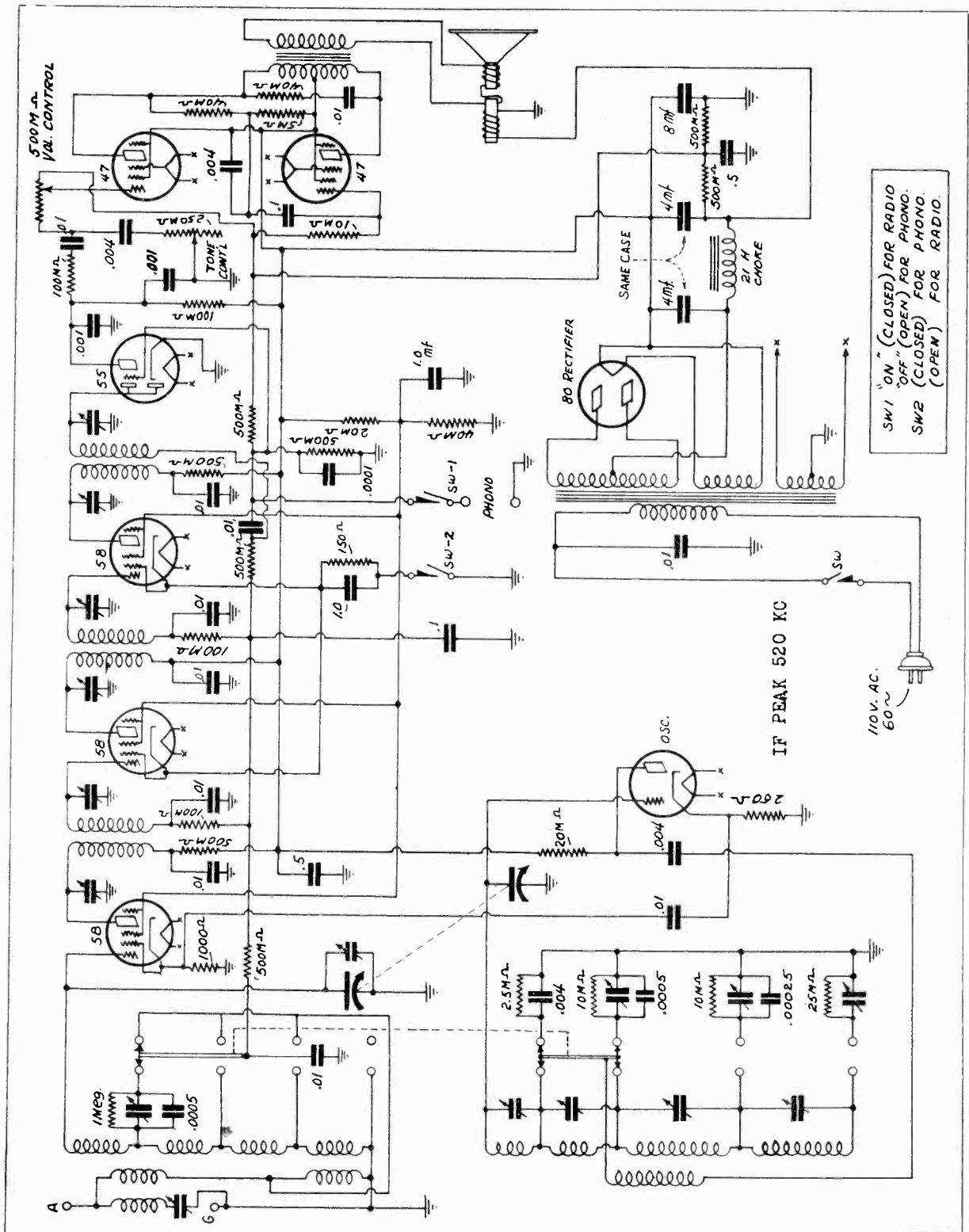
Phonograph connections can be made as shown in Fig. 7. The parts required to make this installation are shown in the parts list.

To mount the phono switch and phono jack, drill holes of a size and in the position shown in Fig. 8 at the left hand side (from back) of the rear panel of the chassis.



MODELS M41, M43  
Schematic

LAFAYETTE RADIO MFG. CO.



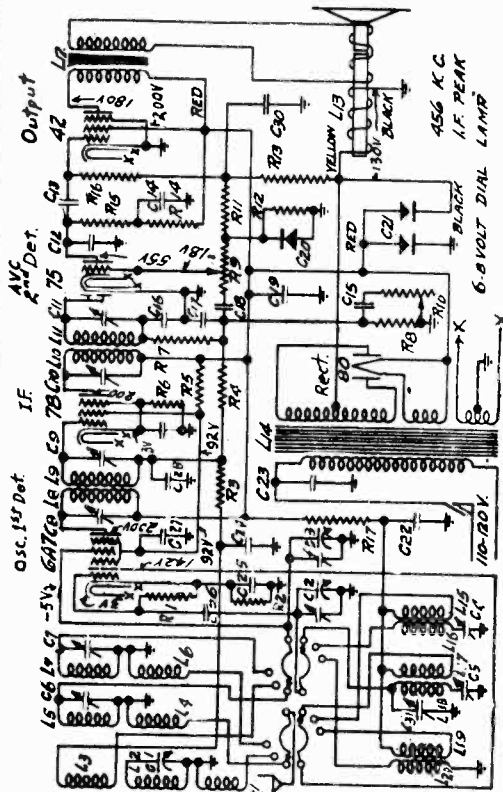
Lafayette DUAL WAVE M-41 - M-43  
8TUBE SUPERHET'

Dated Sept 26 1935	Drawn by Checked by	PRINT NO 110
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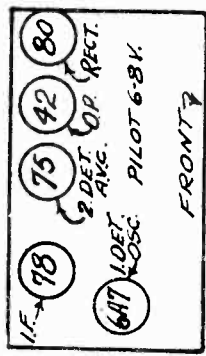
MODEL A77  
 MODELS A81, A81L  
 Schematics, Socket

LAFAYETTE RADIO MFG. CO.

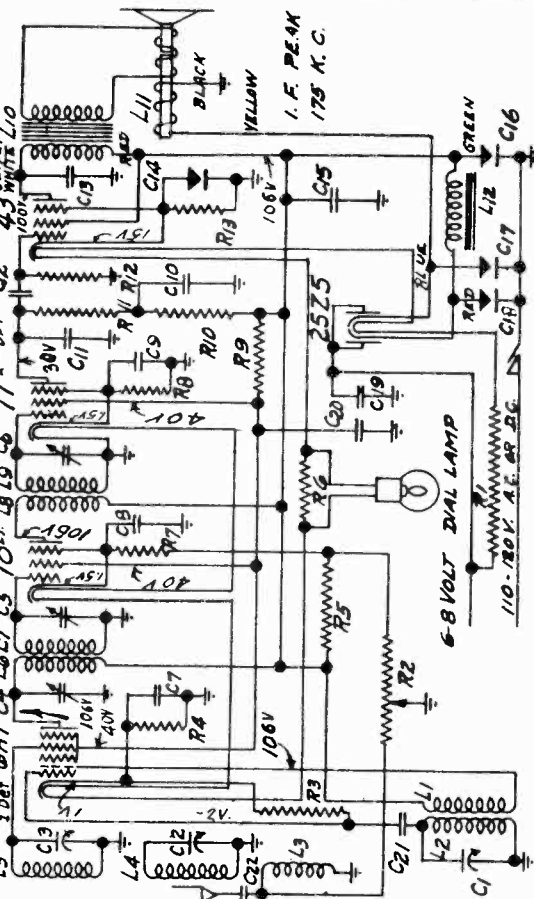


MODEL A81, A81L

R1	55-941	20,000 Ohm Oscillator Grid Resistor	C1	77-1561	16-356 MFD. Third Section of 3 Gang Condenser
R2	55-1062	250 Ohm Oscillator Cathode Resistor	C2	77-1561	16-356 MFD. Oscillator Section of 3 Gang Condenser
R3	53-925	100,000 Ohm A.V.C. Network	C3	77-1561	16-356 MFD. MFD. Section of 3 Gang Condenser
R4	53-926	25,000 Ohm Screen Resistor	C4	78-1569	450 MFD. Broadcast Oscillator
R5	53-1042	25,000 Ohm A.C. Cathode	C5	78-1569	140 MFD. Long Wave Band Oscillator
R6	53-1065	50,000 Ohm I.F. Cathode	C6	78-1568	3-30 MFD. Long Wave Band Preset
R7	53-998	50,000 Ohm Diode Filter	C7	78-1568	3-30 MFD. Skip Band Preset
R8	19-1291	500,000 Ohm Diode Load	C8	78-2005	80 MFD. First I.F. Primary
R9	19-1291	500,000 Ohm Diode Load	C9	78-2005	80 MFD. First I.F. Secondary
R10	19-1317	250,000 Ohm Tone Control	C10	78-2005	80 MFD. Second I.F. Primary
R11	53-925	100,000 Ohm A.C. Bias Network	C11	78-2005	80 MFD. Second I.F. Secondary
R12	53-919	5,000 Ohm C Bias Network	C12	78-265	.001 MFD. Mica Second Detector
R13	53-923	100,000 Ohm C Bias Network	C13	75-265A	.01 MFD. 400 Volt Audio Feed
R14	53-923	100,000 Ohm C Bias Network	C14	75-1326A	.1 MFD. 400 Volt 75 Plate Hum
R15	53-924	250,000 Ohm 75 Plate Hum Resistor	C15	75-269A	.01 MFD. 400 Volt Tone Control
R16	53-925	500,000 Ohm 42 Grid	C16	76-339	.0001 MFD. Mica Diode Filter Net
R17	53-277	100,000 Ohm Oscillator Plate Resistor	C17	76-339	.0001 MFD. Mica Diode Filter Net
L1	17-207	Broadcast Preset Primary	C18	75-269A	.01 MFD. 400 Volt Audio Feed
L2	17-205A	Broadcast Preset Secondary	C19	75-266	1. MFD. 400 Volt B. Supply
L3	17-2031	Broadcast Preset Second Secondary	C20	18-928	25 MFD. 25 Volt. C Bias
L4	17-2031	Long Wave Band Preset Primary	C21	18-928	25 MFD. 25 Volt. C Bias
L5	17-2031	Long Wave Band Preset Secondary	C22	75-269A	.01 MFD. 400 Volt Dry Electro.
L6	17-2017	Foreign Band Preset Primary	C23	75-269A	.01 MFD. 400 Volt Oscillator
L7	17-2016	Foreign Band Preset Secondary	C24	75-272A	.01 MFD. 400 Volt 110 Volt
L8	17-2016	First I.F. Primary	C25	75-272A	.01 MFD. 200 Volt A.V.C. Net.
L9	17-2016	Second I.F. Primary	C26	75-272A	.01 MFD. 200 Volt 6A7 Cathode
L10	17-2016	Second I.F. Secondary	C27	75-272A	.00005 MFD. Mica Oscillator Grid
L11	64-2003	Single 42 Output Transformer	C28	75-272A	.1 MFD. 200 Volt Screen By-Pass
L12	2-2003	2500 Ohm Speaker Field	C29	75-272A	.1 MFD. 200 Volt A.V.C. Net.
L13			C30	75-103A	.2 MFD. 200 Volt C Bias Net.
			C31	78-1568	3-30 MFD. Long Wave Band Oscillator Trimmer

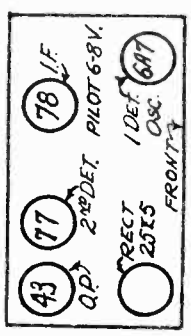


CHASSIS LAYOUT



MODEL A77

R1	20-1125	130 Ohm Resistor in Power Cord	C1	77-853	336 MFD. Oscillator Section
R2	19-1296	10,000 Ohm Volume Control & Switch	C2	77-853	371 MFD. Preset Section
R3	53-898	50,000 Ohm Resistor Oscillator Grid	C3	77-853	371 MFD. Preset Section
R4	53-1062	250 Ohm Resistor 6A7 Cathode	C4	78-2008	First I.F. Primary Trimmer
R5	53-922	75,000 Ohm Resistor I.F. Cathode	C5	78-2007	Second I.F. Trimmer
R6	53-1808	20 Ohm Resistor Pilot Light	C6	75-272A	.1 MFD. 200 Volt 6A7 Cathode
R7	53-1063	500 Ohm Resistor I.F. Cathode	C7	75-272A	.1 MFD. 200 Volt 78 Cathode
R8	53-941	20,000 Ohm Resistor Second Detector	C8	75-267A	.1 MFD. 200 Volt 77 Cathode
R9	53-921	40,000 Ohm Resistor Screen Feed	C9	75-267A	.1 MFD. 200 Volt 77 Cathode
R10	53-923	100,000 Ohm Resistor Hum Resistor	C10	75-272A	.1 MFD. 200 Volt 77 Plate Hum
R11	53-924	250,000 Ohm Resistor 77 Plate	C11	76-265	.001 MFD. Mica 77 Plate By-Pass
R12	53-925	500,000 Ohm Resistor Output Grid	C12	75-269A	.01 MFD. 400 Volt Audio Feed
R13	53-1063	500 Ohm Resistor Output Cathode	C13	75-343A	.004 MFD. Paper Output Plate By-Pass
			C14	18-928	25 MFD. 25 Volt Output Cathode
			C15	75-267A	.5 MFD. 200 Volt B Supply By-Pass
			C16	18-1065	4 MFD. 150 Volt Dry Electrolytic Capacitor
			C17	18-1065	4 MFD. 150 Volt Dry Electrolytic Capacitor
			C18	18-1065	10 MFD. 150 Volt Dry Electrolytic Capacitor
			C19	75-272A	.1 MFD. 200 Volt 110 Volt Line
			C20	75-272A	.1 MFD. 200 Volt Screen By-Pass
			C21	76-264	.00005 MFD. Mica Oscillator Grid
			C22	76-265	.001 MFD. Mica Antenna Series Capacitor
L11	64-1260	3000 Ohm Speaker Field			
L12	14-940	20 Henry Choke			



CHASSIS LAYOUT





MODEL B78

S.P.U. Schematic

LAFAYETTE RADIO MFG. CO.

Tuning Frequency Range

B Range . . . . . 535 to 1730 KC  
 C Range . . . . . 1715 to 5800 KC

D Range . . . . . 5750 to 18300 KC  
 E Range . . . . . 17500 to 48000 KC

Speaker . . . . . Two 12 Inch Auditorium Dynamics

- L 5 Filter Reactor
- L 6 Filter Reactor
- L 7 Speaker Field 4500 ohm
- L 8 Speaker Field 4500 ohm

- R 2 2500 ohm 0.2 watt
- R 3 2500 ohm 0.2 watt
- R 4 500 ohm 0.2 watt
- R 5 500000 ohm 0.2 watt
- R 6 1st I.F. Trans.
- R 7 2nd I.F. Trans.
- R 8 2.0 megohm Volume Control
- R 9 Osc. Inductors

- R 21 2.0 megohm 0.2 watt
- R 22 16000 ohm 0.2 watt
- R 23 25000 ohm 0.2 watt
- R 24 25000 ohm 0.2 watt

- C 34 4.0 mf. 250 V. } Dry Electrolytic
- C 43 16.0 mf. 150 V. } Electrolytic
- C 47 4.0 mf. 250 V. } Block
- C 52 300-600 mmf. } Dual
- C 51 40-100 mmf. } Dual
- R 1 25000 ohm 0.2 watt
- R 3 150 ohm 0.2 watt
- R 4 500 ohm 0.2 watt

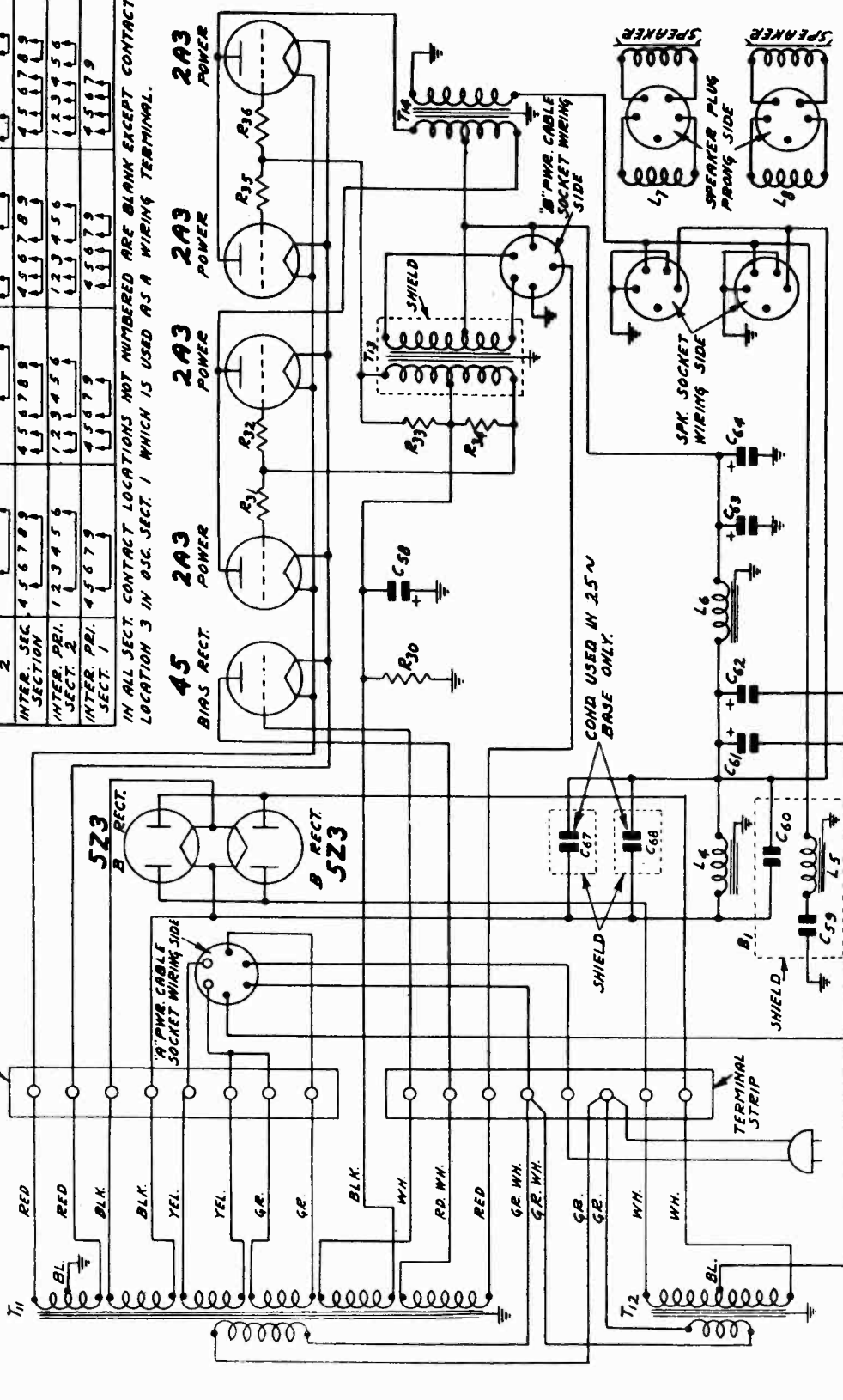
- C 56 2-25 mmf.
- C 57 2-25 mmf. V.
- C 58 60 pf. 150 V. Electrolytic
- C 59 63 pf. 150 V. Electrolytic
- C 60 35 pf. 280 V. Electrolytic
- C 61 30 pf. 400 V. Electrolytic
- C 62 30 pf. 400 V. Electrolytic

- C 12 .01 mf. 360 V.
- C 13 .05 mf. 300 V.
- C 15 12.0 mf. 300 V. Electrolytic
- C 17 2-25 mmf.
- C 18 2-25 mmf.
- C 19 2-25 mmf.
- C 20 2-25 mmf.

ARROWS INDICATE CONNECTIONS PRESENT IN BAND SW. WHEN IN POS. SHOWN.

	POSITION 1 STANDARD WAVE(B)	POSITION 2 SHORT WAVE (C)	POSITION 3 SHORT WAVE (D)	POSITION 4 SHORT WAVE (E)
OSC. SECT. 1	10 11 12 13 4 5 6 7 8 9	10 11 12 13 4 5 6 7 8 9	10 11 12 13 4 5 6 7 8 9	10 11 12 13 4 5 6 7 8 9
OSC. SECT. 2	10 11 12 3 4 5	10 11 12 3 4 5	10 11 12 3 4 5	10 11 12 3 4 5
INTER. SEC. SECTION	4 5 6 7 8 9	4 5 6 7 8 9	4 5 6 7 8 9	4 5 6 7 8 9
INTER. PRI. SECT. 2	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6	1 2 3 4 5 6
INTER. PRI. SECT. 1	4 5 6 7 9	4 5 6 7 9	4 5 6 7 9	4 5 6 7 9

IN ALL SECT. CONTACT LOCATIONS NOT NUMBERED ARE BLANK EXCEPT CONTACT LOCATION 3 IN OSC. SECT. 1 WHICH IS USED AS A WIRING TERMINAL.



THE FOLLOWING NOTES APPLY TO THE RADIO FREQUENCY CHASSIS.  
 GROUPS OF CIRCUIT ELEMENTS ENCLOSED IN DOTTED RECTANGLES COMPRISE DISTINCT MECHANICAL ASSEMBLIES.  
 "B" AND "S" ON SELECTIVITY CONTROL DENOTES "BROAD" AND "SHARP" RESPECTIVELY.  
 THE CAPACITY OF "C" SHIELD IS 20 MMF. THE CAPACITY OF "D" "F" & "G" SHIELDS IS 70 MMF EACH. THE CAPACITY OF "E" SHIELD IS 15 MMF.

LAFAYETTE RADIO MFG. CO.

MODEL B78  
Voltage, Trimmers  
Chassis

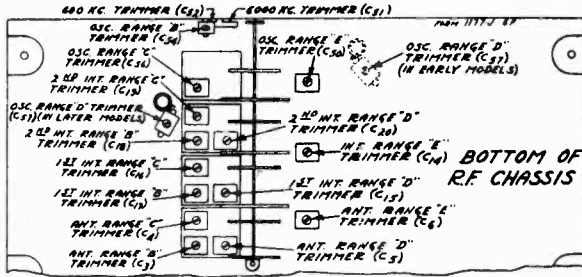


Fig. 6—Trimmer Location

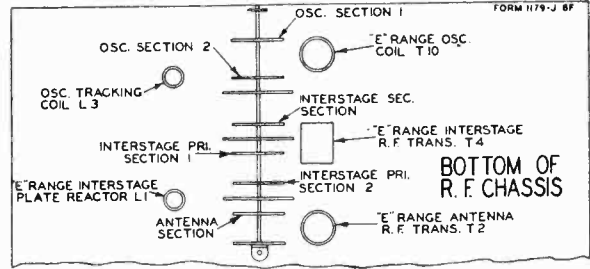


Fig. 5—Bottom View of Chassis Showing Coil and Switch Section Location

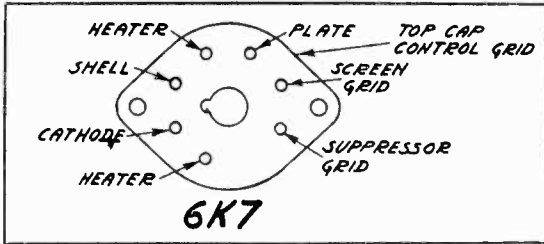


Fig. 7—Bottom View of Metal Tube Socket

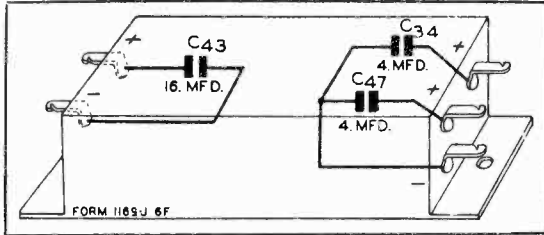


Fig. 8—Condenser Block Internal Wiring

**VOLTAGES AT SOCKETS**  
Antenna Shorted to Ground - Line Voltage 110  
Volume Control Maximum

Tube	Function	Across Heater	Plate to Ground	Screen to Ground	Cathode to Ground	M. A.
6K7	R. F.	5.8	110	4.1	10.5	
6K7	1st Det.	5.8	300	142	10.0	3.5
76	Osc.	5.8	142		10.0	10.0
6K7	1st I. F.	5.8	300	110	4.1	10.5
6K7	2nd I. F.	5.8	300	110	3.7	10.0
6B7	Sig. Diode & Audio Amp.	5.8(1) 5.6(2)	300		115	3.6 4.5
6F7	Bass Amp.	5.8(1) 5.6(2)	275(3) 125(4)		115	7.2
76	A.V.C. Diode	4.9	0		-62.0	
76	A.V.C. Amp.	4.9	0		60(5)	60.0(6)
2A3	Power	2.35	300			375.0(7)
5Z3	'B' Rect.	4.8				
45	Bias Rect.	2.4				

- (1) Measured with A. C. Voltmeter—early models with letter "A" under chassis, measured with D. C. Volt. meter—later models with letter "B".
- (2) Measured with D. C. Volt. meter—later models with letter "B".
- (3) Diode Plate.
- (4) Triode Plate.
- (5) Control Grid to ground.
- (6) Each Side of push-pull Circuit—120 Ma. total for 4 tubes.
- (7) Total for both tubes—Milliammeter in series with 1st. Choke.

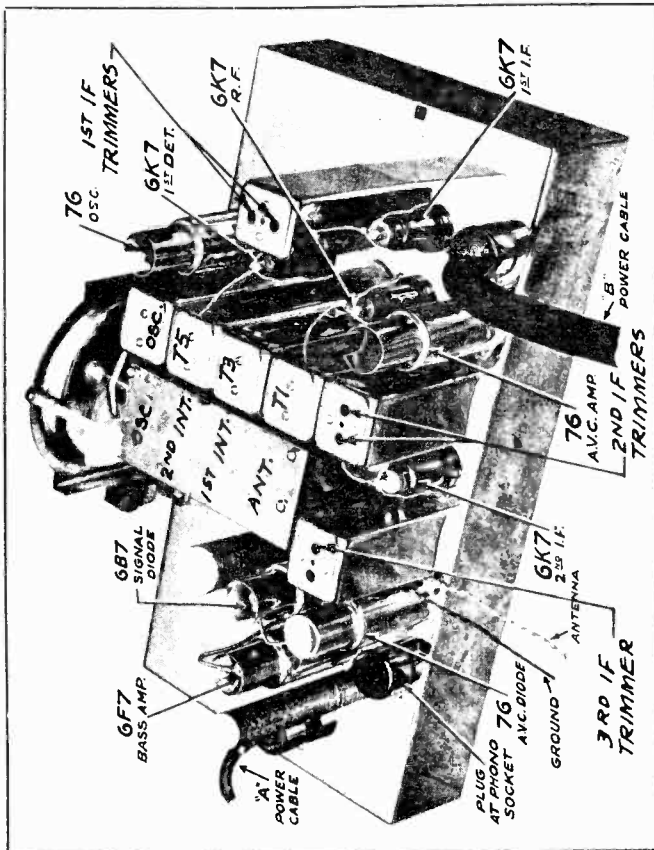


Fig. 10—Tube Arrangement in R.F. Chassis

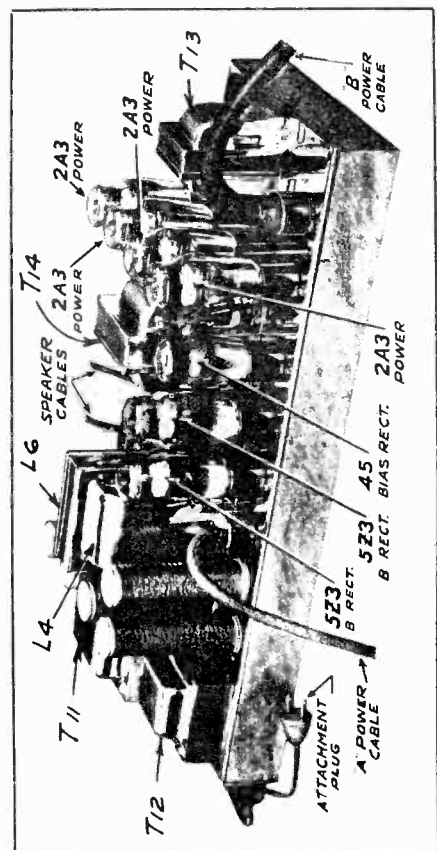


Fig. 11—Tube Arrangement in A.F. Chassis



MODEL B78

Trimmers, Color Code  
Changes, Phono.

LAFAYETTE RADIO MFG. CO.

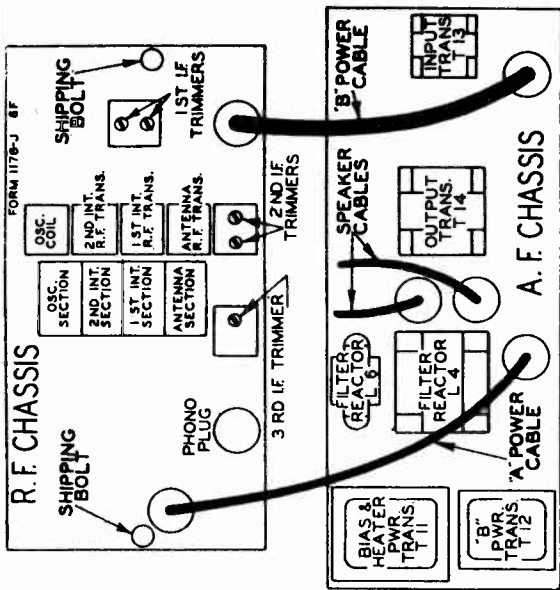


Fig. 4—Top View of Chassis Showing Location of Unite

Changes in Early Models

In the early models condenser C65, shown in the R.F. Schematic Fig. 2, was not used. A 20 mmf. condenser, also designated as C65, was connected in parallel with condenser C14.

Condenser C10 from B+ to ground was not used in early models. Another condenser in the early models, also designated as C10 and 250 mmf. in value, was connected from the A.V.C. amplifier plate to ground.

Resistor R38 was not used in early models.

On the A.F. chassis the speaker sockets were wired with ground to the opposite side of voice coil.

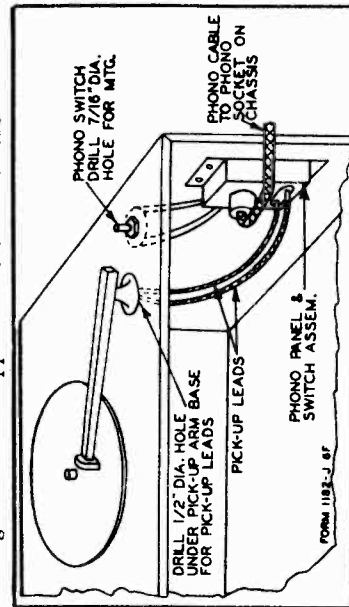


Fig. 14—Phonograph Connections Using Phono Cable and Panel Assembly

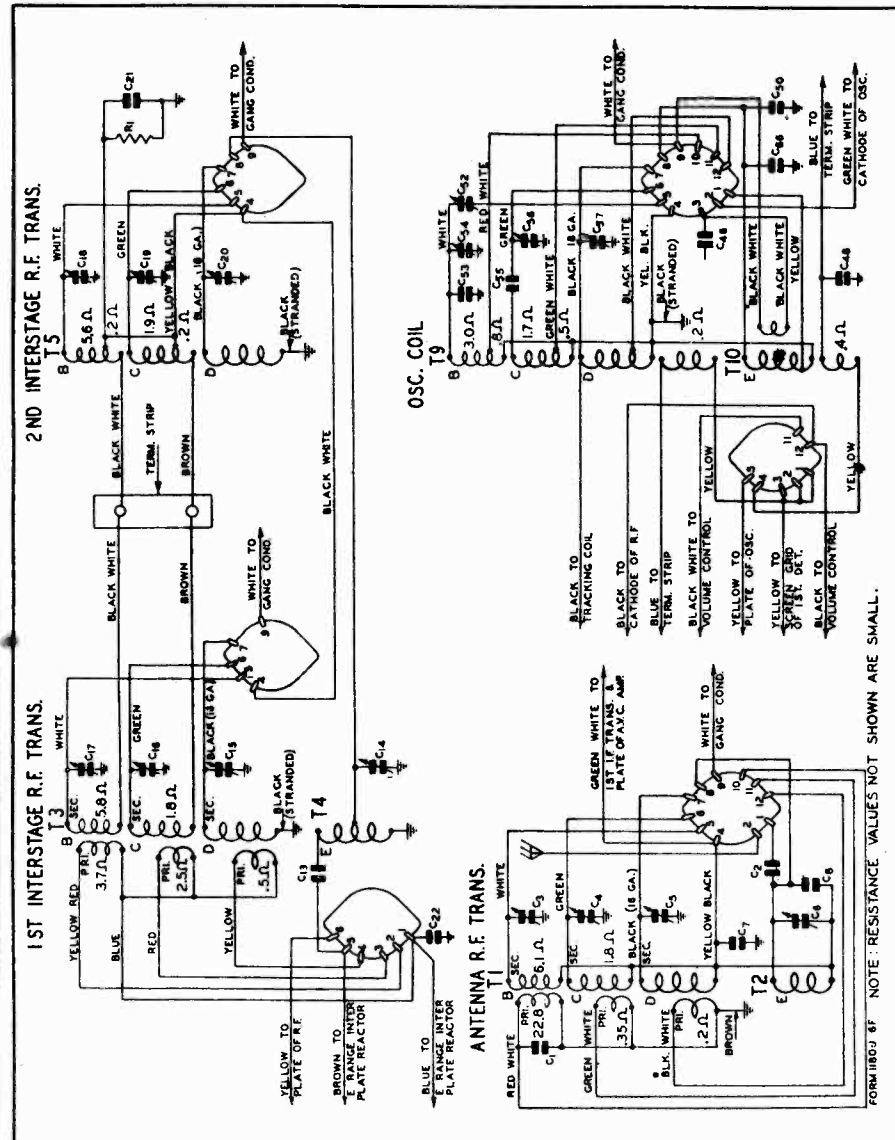


Fig. 12—Color Coding of Coil Wires and D. C. Resistances of Windings

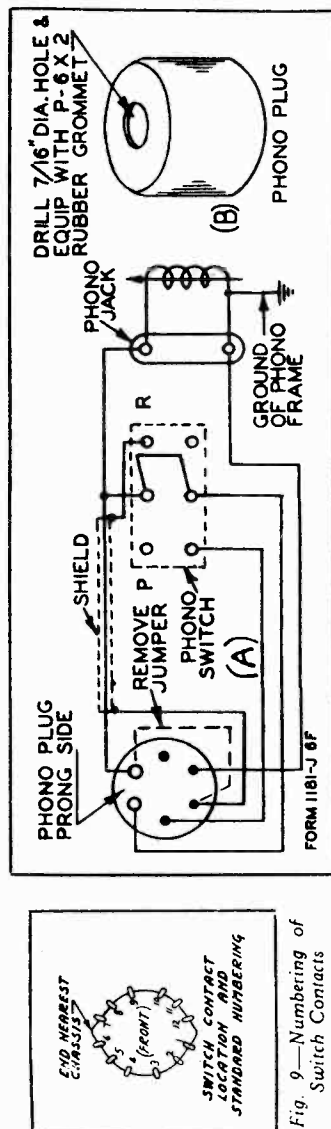


Fig. 9—Numbering of Switch Contacts

Fig. 13—Phonograph Connections

## LAFAYETTE RADIO MFG. CO.

MODEL B78  
Alignment  
Resistances

## D. C. Resistance of Windings

Refer to Figs. 12, 2 &amp; 3.

Part No.	Winding	Code	D. C. Resistance in Ohms
P-9A428	Antenna R.F. Transformer	T1	
	Range B Primary Winding		22.8
	Range C Primary Winding		0.35
	Range D Primary Winding		0.2
	Range B Secondary Winding		6.1
P-9A435	"E" Range Antenna R.F. Coil	T2	Small
	1st Interstage R.F. Transformer	T3	
	Range B Primary Winding		3.7
P-9A429	Range C Primary Winding		2.5
	Range D Primary Winding		0.5
	Range B Secondary Winding		5.8
	Range C Secondary Winding		1.8
	Range D Secondary Winding		Small
P-9A436	"E" Range Interstage R.F. Coil	T4	
	Tap to either side		Small
P-53X85	"B" Power Transformer (115 Volts 60 Cycles)	T12	
	Primary Winding		1.9
	Secondary Winding		48.0
	Center Tap to Inside Center Tap to Outside		53.1
P-50X25	Audio Input Transformer	T13	
	Primary Winding		
	Tap to Plate of 6F7 Tap to Tone Control and Plate of 6B7		6600. 4650.
	Secondary Winding		
P-51X33	Center Tap to Inside		2840.
	Center Tap to Outside		3260.
	Audio Output Transformer	T14	
	Primary Winding		
P-12A206	Center Tap to Inside		19.7
	Center Tap to Outside		22.4
	Secondary Winding		0.4
P-12A213	12" Dynamic Speaker		
	Speaker Voice Coil		6.3
	Speaker Field	L7	4500.
P-9A391	12" Dynamic Speaker		
	Speaker Voice Coil		6.3
	Speaker Field	L8	4500.
P-9A450	"E" Range Interstage Plate Reactor	L1	1.0
	2nd I.F. Plate Isolating Reactor	L2	35.0
P-9A391	High Frequency Oscillator Tracking Coil	L3	1.0
P-52X35	Filter Reactor	L4	51.6
	Filter Reactor	L6	11.2
P-48X201	Block Condenser & 10 KC Reactor Assembly	B1	
	10 KC Reactor	L5	0.6
P-9A430	2nd Interstage R.F. Coils	T5	
	Range B Section		
	Long Portion		5.6
	Short Portion		0.2
	Range C Section		
	Long Portion		1.9
P-9A432	Short Portion		0.2
	Range D Section		Small
	1st I.F. Transformer	T6	
	Primary Winding		4.4
	Coupling Winding		0.3
	Secondary Winding		
P-9A433	Tap to Condenser Side		3.0
	Tap to Switch Side		1.3
	2nd I.F. Transformer	T7	
	Primary Winding		4.4
P-9A434	Coupling Winding		0.3
	Secondary Winding		
	Tap to Condenser Side		3.0
	Tap to Switch Side		1.3
P-9A434	3rd I.F. Transformer	T8	
	Primary Winding (Yellow to Blue)		9.7
	Signal Diode Secondary		12.4
	A.V.C. Secondary (Brown to Green)		7.0
P-9A431	Oscillator Coils	T9	
	Range B Grid Coil		
	Red-White tap to White		3.0
	Red-White tap to Black-Yellow		0.8
	Range C Grid Coil		
	Green-White tap to Green		1.7
	Green-White tap to Black-Yellow		0.5
P-9A437	Range D Grid Coil		
	Black-White tap to Black		Small
	Black-White tap to Black-Yellow		Small
	Oscillator Range D Plate Coil		0.2
P-9A437	"E" Range Oscillator Coils	T10	
	Range E Grid Coil		Small
	Range E Plate Coil		4
	Range E Series Grid Coil		Small
P-53X88	Filament Transformer (115 Volts 60 Cycles)	T11	
	Primary Winding		4.4
	Filament Transformer Secondaries, below		
	Red to Red		Small
	Black to Black		Small
	Yellow to Yellow		Small
	Green to Green		Small
Black to White		22.8	
Red-White to Red		32.9	

## Phonograph in Separate Cabinet

For this assembly, a 5 conductor cable and a small metal panel assembly are supplied. This assembly has the radio-phonograph switch, tip jacks for pick-up leads and terminal plate for phono cable.

The phono panel is mounted at the most convenient place in the cabinet at which connections can be completed. The switch is secured to the motor board as illustrated in Fig. 14.

The socket at the end of the cable is secured to the terminal plate on the panel and the plug at the other end of the cable is inserted into the phono socket on the R.F. chassis.

When the switch is thrown to the radio side, the phono pick-up is excluded from the signal diode circuit. When it is thrown to the phono side, the signal diode circuit is opened and the phonograph connections completed to this circuit. Resistor R23 is short circuited. This brings the grid and cathode of the 76 A.V.C. amplifier to the same potential and causes a plate current in this tube of sufficient intensity to bring the R.F. and 1st I.F. tubes to the point of cut off (See article on circuit for further information regarding operation of A.V.C. system).

## Phonograph and Radio in Combination Cabinet

For this assembly, a number of separate items as shown in the parts list are supplied. The phono short circuiting plug supplied with the receiver is used after certain changes have been made.

First take off the shell of this plug by twisting the shell in either direction. The shell is then drilled and equipped with a rubber grommet as shown in Fig. 13 (B). Next unsolder and remove the jumper wire from the plug as shown in Fig. 13 (A). Extend the leads through the hole in the shell and solder the leads to the prongs on the plug as illustrated. Complete the connections to the switch and tip jacks as shown. The switch is mounted on the motor board and the tip jacks at the nearest convenient place.

The description of the connections as given for the separate phonograph cabinet also applies to the combination.

## Alignment and Calibration

Correct alignment is extremely important in connection with all-wave receivers. The receivers are all properly aligned at the factory with precision instruments and realignment should not be attempted unless all other possible causes of the faulty operation have first been investigated as usual by the service technician has the proper equipment.

A signal generator that will provide an accurately calibrated signal at 416, 1730, 1500, 600, 1800, 5000, 18,300, 15,000, 6000, 48,000 and 40,000 KC and an output indicating meter are required. It will be practically impossible to align the receiver if unsatisfactory apparatus is used. If a station is tuned in with the selectivity control in the broad position and this control is then turned to the sharp position, the station may disappear. This is not an indication that the receiver is out of alignment.

Use a non-metallic screwdriver for the adjustments. The complete procedure is as follows:

## I. F. Adjustment

Set the signal generator for a signal of 416 KC. Connect the output of the signal generator to the grid of the 1st detector through a 0.1 mf. condenser. Connect the ground lead of the receiver to the ground post of the signal generator.

Turn the band selector to the Range B position (standard wave band—purple dial color).

Turn the selectivity control to the sharp position and keep it in this position for all adjustments.

Turn the volume control to the maximum position. Attenuate the signal from the signal generator to prevent the leveling-off action of the A.V.C.

Then adjust the five I.F. trimmers until maximum output is obtained. The adjusting screws for these condensers are reached from the top of the chassis, and the location is shown in Fig. 4.

## Range B Alignment

## 1730 KC Adjustment

Set the signal generator for 1730 KC.

Turn the rotor of the tuning condenser to the full open position.

Keep the band selector in the standard wave position.

Connect the antenna lead of the receiver through a 200 mmf. condenser to the output of the signal generator.

For this and all subsequent adjustments keep the volume control at the maximum position and attenuate the signal from the signal generator to prevent A.V.C. action.

Adjust the oscillator Range B trimmer (C14) until maximum output is obtained. The location of this trimmer is shown in Fig. 6.

## 1500 KC Adjustment

Set the signal generator for 1500 KC.

Turn the rotor of the tuning condenser carefully until maximum output is obtained.

Loosen the pointer set screw and set the large pointer at the 1500 KC mark on the standard wave band scale. Re-tighten the set screw.

Adjust the 1st and 2nd interstage Range B trimmers (C17 and C18) and antenna Range B trimmer (C3) to maximum.

Do not change the setting of the oscillator Range B trimmer.

## 600 KC Adjustment

Set the signal generator for 600 KC.

Turn the tuning condenser rotor until maximum output is obtained.

Turn the rotor slowly back and forth at the same time adjusting the 600 KC trimmer until the peak of greatest intensity is obtained. See Fig. 6 for location of this trimmer.

Be sure to use a non-metallic screwdriver for this adjustment.

## Range C Alignment

## 5800 KC Adjustment

Set the signal generator for 5800 KC.

Connect the antenna lead of the receiver through a 400 ohm resistor to the output of the signal generator.

Turn the rotor of the tuning condenser to the full open position.

Turn the band selector to the Range C position (1st short wave band—green dial color).

As mentioned above, keep the volume control at the maximum position and attenuate the signal from the signal generator to prevent A.V.C. action. Adjust the oscillator Range C trimmer (C16) until maximum output is obtained. See Fig. 6 for location of this trimmer.

## 5000 KC Adjustment

Set the signal generator for 5000 KC.

Turn the rotor of the tuning condenser carefully until maximum output is obtained.

Adjust the 1st and 2nd interstage Range C trimmers (C16 and C19) and antenna Range C trimmer (C4) to maximum.

Do not change the setting of the oscillator Range C trimmer.

## Range D Alignment

## 18,300 KC Adjustment

Set the signal generator for 18,300 KC.

Keep the antenna lead of the receiver connected through the 400 ohm resistor to the output of the signal generator.

Turn the rotor of the tuning condenser to the full open position.

Turn the band selector to the Range D position (2nd short wave band—red dial color).

As mentioned above, keep the volume control at the maximum position and attenuate the signal from the signal generator to prevent A.V.C. action.

Adjust the oscillator Range D trimmer (C17) until maximum output is obtained. See Fig. 6 for location of this trimmer.

## 15,000 KC Adjustment

Set the signal generator for 15,000 KC. Turn the rotor of the tuning condenser carefully until maximum output is obtained.

Adjust the 1st and 2nd interstage Range D trimmers (C19 and C20) and antenna Range D trimmer (C1) to maximum.

When adjusting the 2nd interstage Range D trimmer, it will be necessary at the same time to turn the tuning condenser rotor slowly back and forth until the peak of greatest intensity is obtained.

Then go back and repeat the procedure as given for the 18,300 KC adjustment. If it is found necessary to make any appreciable change in the setting of the oscillator Range D trimmer, the 15,000 KC adjustment must be repeated.

Do not make any further change in the setting of the oscillator Range D trimmer.

## 6000 KC Adjustment

Set the signal generator for 6000 KC.

Turn the tuning condenser rotor until maximum output is obtained.

Turn the rotor slowly back and forth at the same time adjusting the 6000 KC trimmer until the peak of greatest intensity is obtained. See Fig. 6 for location of this trimmer.

Use a non-metallic screwdriver for this adjustment.

## Range E Alignment

## 48,000 KC Adjustment

Set the signal generator for 48,000 KC.

Keep the antenna lead of the receiver connected through the 400 ohm resistor to the output of the signal generator.

Turn the rotor of the tuning condenser to the full open position.

Turn the band selector to the Range E position (3rd short wave band—brown dial color).

Adjust the oscillator Range E trimmer (C10) until maximum output is obtained. See Fig. 6 for location of this trimmer.

Do not change the setting of the oscillator Range E trimmer.

## 40,000 KC Adjustment

Set the signal generator for 40,000 KC.

Turn the rotor of the tuning condenser carefully until maximum output is obtained.

Adjust the interstage Range E trimmer (C14) and antenna Range E trimmer (C6) to maximum.

Do not change the setting of the oscillator Range E trimmer.

## Switch Contact Location Numbering

A standard arrangement for switch contact location numbering has been adopted. This numbering is illustrated in Fig. 9. In contact locations not used, the number applying to that particular location is not employed.

## Twenty-five Cycle Receivers

The twenty-five cycle receiver differs from the sixty cycle receiver in the fact that special twenty-five cycle filament and "B" power transformers must be used. It also has two additional condensers in the power unit—C67 and C68 as illustrated in Fig. 3. The twenty-five cycle transformers and the condensers are shown in the parts list.

The twenty-five cycle receiver can be operated satisfactorily from a sixty cycle power supply if the two condensers C67 and C68 are removed. However, the reverse is not true, that is, a sixty cycle receiver cannot be operated from a twenty-five cycle power supply.

115-230 Volt, 40 to 60 cycle filament and "B" power transformers are also available for this model.





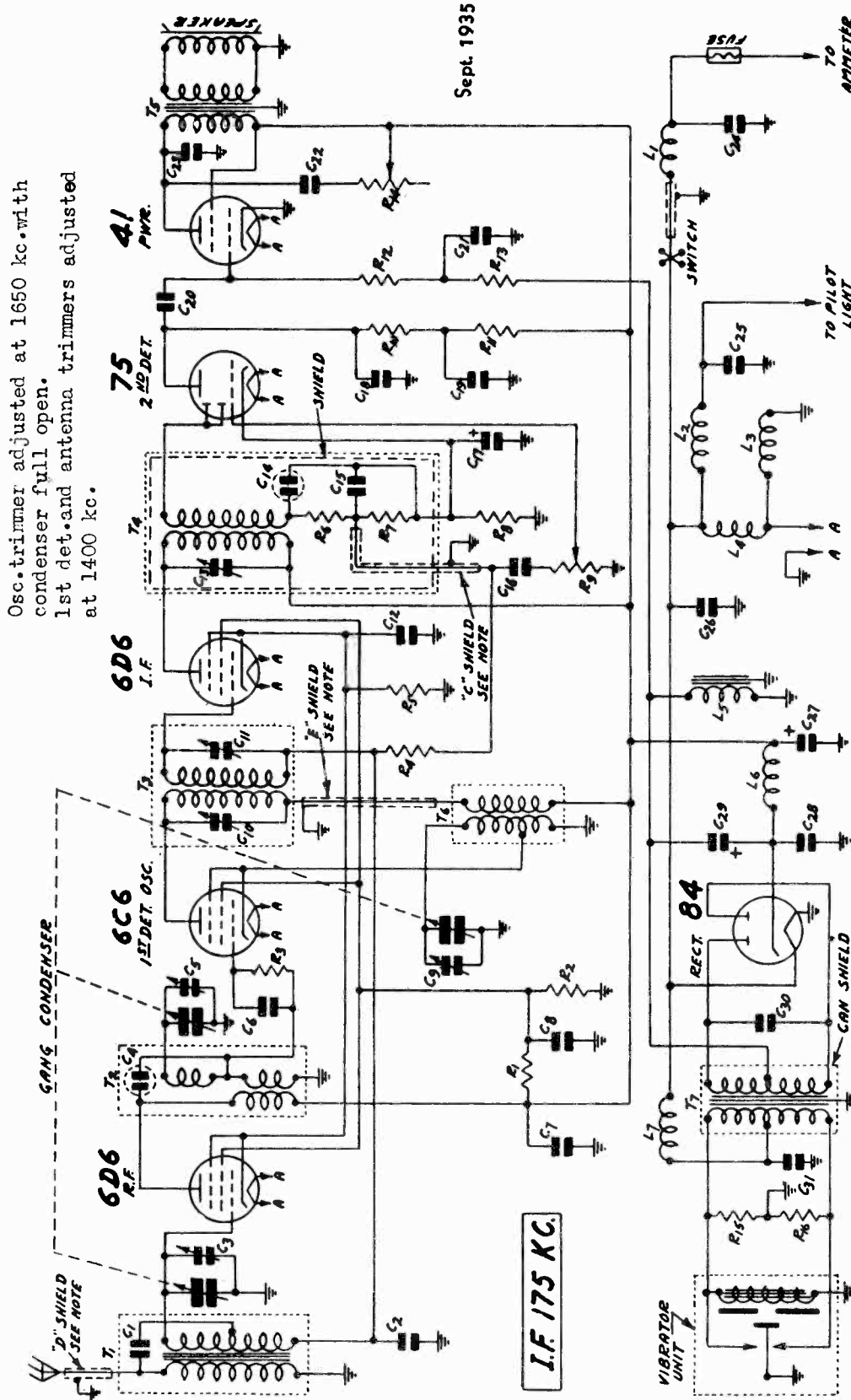
LAFAYETTE RADIO MFG. CO.

MODEL B90(R) Early Schematic

Power Consumption - - - 6.5 Amperes at 6.3 Volts  
 Power Output - - - - 3 Watts Undistorted  
 Tuning Frequency Range - - - - 530-1650 KC

Osc. trimmer adjusted at 1650 kc. with condenser full open.  
 1st det. and antenna trimmers adjusted at 1400 kc.

Sept. 1935



I.F. 175 KC.

GROUPS OF CIRCUIT ELEMENTS ENCLOSED IN DOTTED RECTANGLES COMPRISE DISTINCT MECHANICAL ASSEMBLIES.  
 CIRCUIT ELEMENTS ENCLOSED IN DOTTED CIRCLES DO NOT EXIST AS DISTINCT UNITS BUT OCCUR AS A RESULT OF THE MUTUAL POSITION OF OTHER CIRCUIT ELEMENTS OR THEIR PARTS.  
 THE CAPACITY OF "C" SHIELD IS 37 MMF. THE CAPACITY OF "D" SHIELD IS 85 MMF. AND THE CAPACITY OF "E" SHIELD IS 15 MMF.

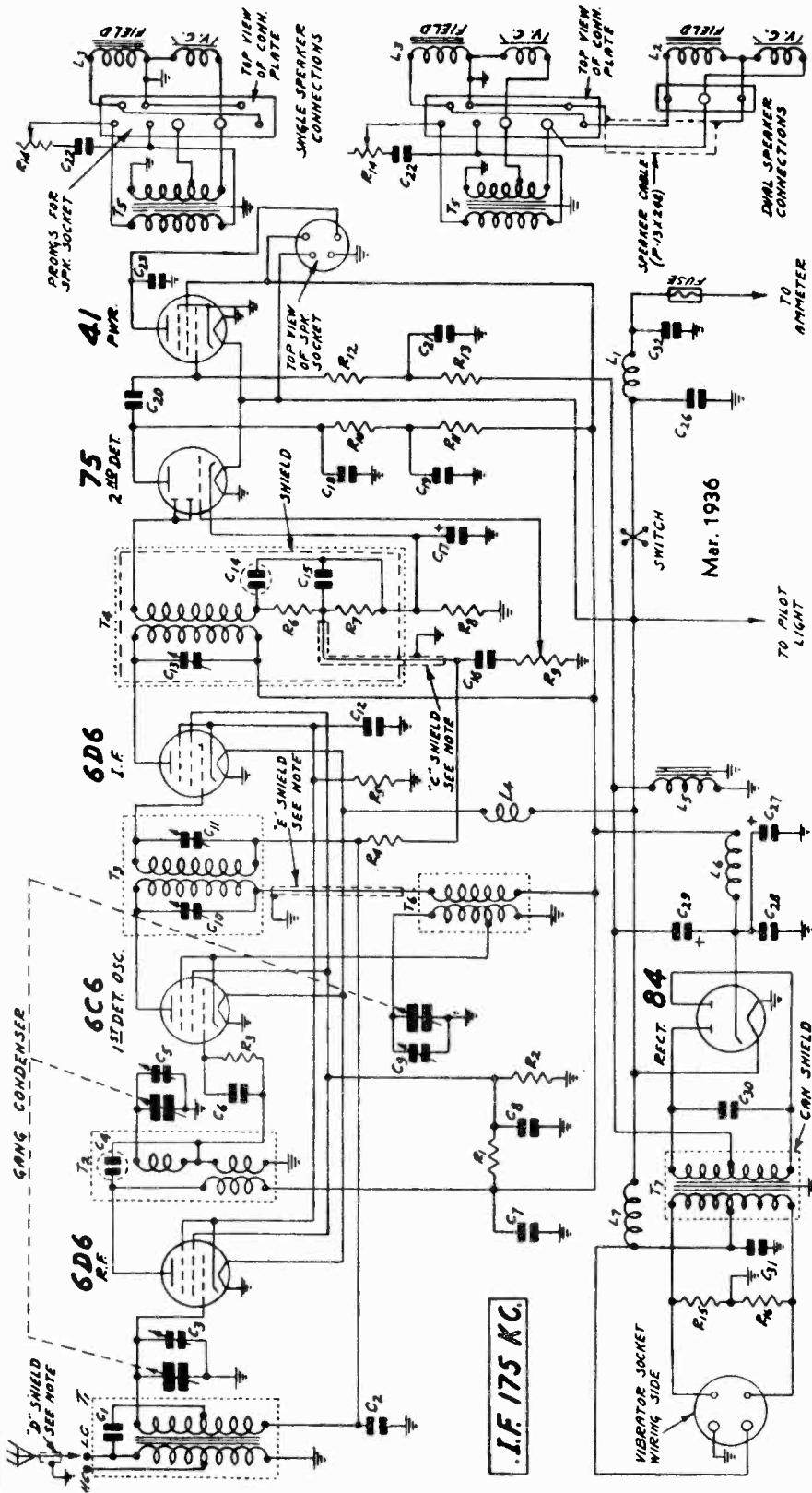
- |     |                                     |     |                           |
|-----|-------------------------------------|-----|---------------------------|
| C1  | 21 mmf.                             | T6  | Osc. Inductor             |
| C2  | .05 mf. 180 V.                      | T7  | Power Trans.              |
| C3  | Gang Trimmer                        | L1  | Motor Noise Reactor       |
| C4  | 40 mmf.                             | L2  | Pilot Light Reactor       |
| C5  | Gang Trimmer                        | L3  | Speaker Field 5.3         |
| C6  | .10 mf. 160 V.                      | L4  | Flament Reactor           |
| C7  | .10 mf. 180 V.                      | L5  | Filter Choke              |
| C8  | .10 mf. 180 V.                      | L6  | "B" Reactor               |
| C9  | .10 mf. 180 V.                      | L7  | Vibrator Reactor          |
| C10 | 70-150 mmf. } Osc Unit              |     |                           |
| C11 | 70-150 mmf. }                       |     |                           |
| C12 | .10 mf. 180 V.                      | R1  | 17000 ohm 1.0 W.          |
| C13 | 70-150 mmf.                         | R2  | 2000 ohm .5 W.            |
| C14 | 250 mmf.                            | R3  | .50 Megohm 2 W.           |
| C15 | 250 mmf.                            | R4  | 1.0 Megohm .5 W.          |
| C16 | .01 mf. 360 V.                      | R5  | 5000 ohm .5 W.            |
| C17 | .50 mf. 25 V.                       | R6  | 50000 ohm .2 W.           |
| C18 | 250 mmf.                            | R7  | 50000 ohm .2 W.           |
| C19 | .10 mf. 360 V.                      | R8  | 6000 ohm .2 W.            |
| C20 | .01 mf. 360 V.                      | R9  | 2.0 Megohm Volume Control |
| C21 | .25 mf. 180 V.                      | R10 | 15000 ohm 2 W.            |
| C22 |                                     | R11 | 50000 ohm 2 W.            |
| C23 | .02 mf. 600 V.                      | R12 | .50 Megohm 2 W.           |
| C24 | .50 mf. 180 V.                      | R13 | 10000 ohm .2 W.           |
| C25 | 200 mmf.                            | R14 | 15000 ohm Tone Control    |
| C26 | 200 mmf.                            | R15 | 50 ohm .5 W.              |
| C27 | 50 mf. 360 V.                       | R16 | 50 ohm .5 W.              |
| C28 | 50 mf. 360 V.                       | T1  | Antenna Trans.            |
| C29 | 8.0 mf. 350 V. } Electrolytic Block | T2  | R. F. Interstage Trans.   |
|     |                                     | T3  | 1st I. F. Trans.          |
|     |                                     | T4  | 2nd I. F. Trans.          |
|     |                                     | T5  | Output Trans.             |

MODEL B90(N) Late  
Schematic, Socket  
Trimmers

LAFAYETTE RADIO MFG. CO.

Power Consumption - - 7.0 Amperes at 6.0 Volts  
Power Output - - - - 3 Watts Undistorted  
Sensitivity - - - - - 1.0 Microvolt Absolute  
Selectivity - - 45 KC Broad at 1000 Times Signal

Tuning Frequency Range - - - 530 to 1650 KC  
Intermediate Frequency - - - - 175 KC  
Speaker - - - - - 6 inch Dynamic



GROUPS OF CIRCUIT ELEMENTS ENCLOSED IN DOTTED RECTANGLES COMPRISE DISTINCT MECHANICAL ASSEMBLIES.  
CIRCUIT ELEMENTS ENCLOSED IN DOTTED CIRCLES DO NOT EXIST AS DISTINCT UNITS BUT OCCUR AS A RESULT OF THE MUTUAL POSITION OF OTHER  
THE CAPACITY OF "C" SHIELD IS .37 M.M.F. THE CAPACITY OF "D" SHIELD IS .85 M.M.F. AND THE CAPACITY OF "E" SHIELD IS .15 M.M.F.

- C 1 10 mmf.
- C 2 .05 mf. 180 V.
- C 3 Gang Trimmer
- C 4 40 mmf.
- C 5 Gang Trimmer
- C 6 .35 mmf. 360 V.
- C 7 10 mf. 180 V.
- C 8 10 mf. 180 V.
- C 9 10 mf. 180 V.
- C 10 70-150 mmf. } Dual
- C 11 70-150 mmf. }
- C 12 10 mf. 180 V.
- C 13 70-150 mmf.
- C 14 250 mmf.
- C 15 250 mmf.
- C 16 .01 mf. 360 V.
- C 18 250 mmf.
- C 19 .10 mf. 360 V.
- C 20 .01 mf. 360 V.
- C 21 .25 mf. 180 V.
- C 22 .02 mf. 600 V.
- C 23 .02 mf. 600 V.
- C 26 2000 mmf.
- C 28 2000 mmf.
- C 30 .0075 mf. 1600 V.
- C 31 .50 mf. 180 V.
- C 32 2000 mmf.
- C 37 4.0 mf. 25 V. } Electrolytic
- C 38 3.0 mf. 350 V. } Block
- C 39 3.0 mf. 350 V. }
- R 1 2000 ohm. 5 W.
- R 2 500 ohm. 2 W.
- R 3 350 ohm. 2 W.
- R 4 1.0 Megohm. 2 W.
- R 5 350 ohm. 2 W.
- R 6 50000 ohm. 2 W.
- R 7 50000 ohm. 2 W.
- R 8 6000 ohm. 2 W.
- R 9 2.0 Megohm Vol. Control
- R 10 150000 ohm. 2 W.
- R 11 50000 ohm. 2 W.
- R 12 50 Megohm. 2 W.
- R 13 100000 ohm. 2 W.
- R 14 150000 ohm. 2 W.
- R 15 50 ohm. 5 W.
- R 16 50 ohm. 5 W.
- T 1 Antenna Trans.
- T 2 R.F. Inter. Trans.
- T 3 1st I.F. Trans.
- T 4 2nd I.F. Trans.
- T 5 Output Trans.
- T 7 Power Trans.
- L 1 Motor Noise Reactor
- L 2 Speaker Field 4.9 ohm
- L 3 Speaker Field 5.3 ohm
- L 4 Filament Reactor
- L 5 Filter Reactor
- L 6 "B" Reactor
- L 7 Vibrator Reactor

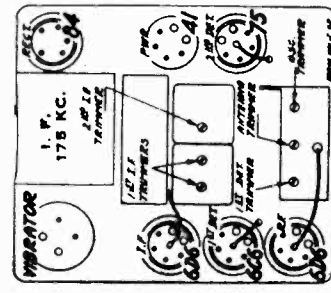


Fig. 2—Location of Tubes and Trimmers

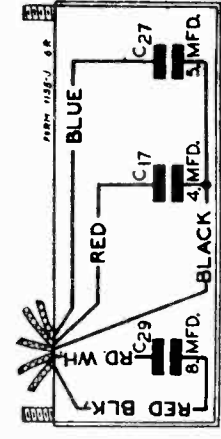
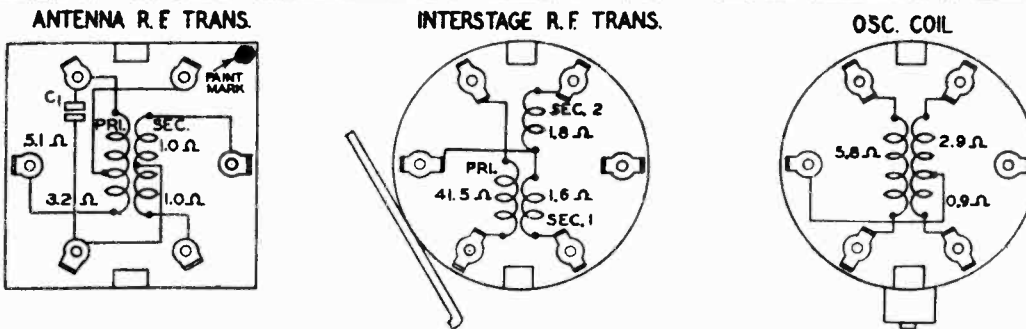


Fig. 4—Condenser Block—Internal Wiring

LAFAYETTE RADIO MFG. CO.

MODEL B90(N) Late Voltage Alignment Coils, Resistances



**Calibrating the Receiver**  
 To calibrate the receiver, tune in a station of known frequency. At the back of the control head is the calibration screw. Remove the pilot lamp assembly. Insert a fine blade screwdriver and turn this screw until the pointer on the dial scale is at the frequency of the station being received. The knob must be held during this adjustment.  
 If the control head is inaccessible it may be calibrated by setting the pointer from the front. Remove the crystal by inserting a knife blade under the lower edge. Loosen the pointer screw, set the pointer and retighten.

Fig. 3—R. F. and Oscillator Coil Base Terminal Arrangement and D. C. Resistance of Windings

**D. C. Resistance of Windings**

Following are the D. C. resistances of the various windings in the chassis. The values given below will vary slightly in different sets.

Code	Winding	D. C. Resistance in Ohms
T1	Antenna Transformer	
	Primary Winding	
	Long Portion	5.1
	Short Portion	3.2
T2	Interstage Transformer	
	Primary Winding	41.5
	Secondary Winding	
	No. 1	1.6
T3	1st I. F. Transformer	
	Primary Winding	88.0
T4	2nd I. F. Transformer	
	Primary Winding	43.0

Code	Winding	D. C. Resistance in Ohms
T5	Dynamic Speaker	
	Output Transformer	
L3	Speaker Field	416.6
	Speaker Voice Coil	Small
T6	Oscillator Coils	
	Grid Coil	
	Long Portion	2.9
	Short Portion	0.9
T7	Plate Coil	5.8
	Power Transformer	
	Primary Winding	
	Center Tap to Inside	Small
L1	Motor Noise Reactor	Small
	Filament Reactor	.22
	Filter Choke	300.0
	R. F. "B" Plate Reactor	4.0
L7	Vibrator Filter Reactor	Small

**VOLTAGES AT SOCKETS**

Antenna Disconnected Battery 6 Volts Under Load

Type of Tube	Function	Across Heater	Plate to Ground	Screen to Ground	Cathode to Ground	Cathode Current M. A.
6D6	R. F. Amp.	5.6	245	105	5.2	7.5
6C6	1st Det. Osc.	5.6	245	105	0	2.9
6D6	I. F. Amp.	5.6	245	105	5.2	7.5
75	2nd Det.	5.8	120(1)		1.4	0.14
41	Power	5.8	235	245	15.0(2)	30.0
84	Rectifier	5.8				52.0

(1) With 250,000 Ohm Meter  
 (2) Read Across Filter Choke

**Antenna**

**IMPORTANT**—If the car antenna is of high capacity (600 mmf. or higher) insert the antenna plug with the mark on the HC side—See Fig. 10. If it is a low capacity antenna, insert the plug with the mark on the LC side.

The General Motors cars have steel roofs, and a running board or other under car antenna must be used. These are low capacity antennas. The Chrysler motor cars (except Plymouth) have a steel roof separated from the body proper, which is used as an antenna. These are high capacity antennas. Other cars without steel roofs such as Ford and Plymouth have a built-in roof antenna which is of low capacity.

If a running board or under-car antenna is used, it must be one which is covered with a suitable insulation, to prevent short circuiting in wet weather.

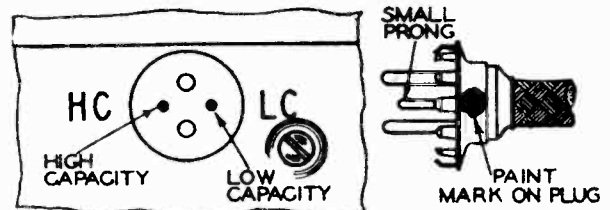


Fig. 10—Antenna Plug Insertion

**I. F. Adjustment**

Set the signal generator for a signal of 175 KC. Connect the antenna lead of the signal generator thru a .05 mf. condenser to the stator of the 1st detector section of the tuning condenser. (See Fig. 2 for location of this section.) This can be done by pushing a wire or conductor between the stator plates or by extending an insulated wire thru the hole in the shield over the stator and pushing the wire thru the hole in the lug which extends up from the insulated stator assembly.

Connect the ground lead of the signal generator to the chassis ground. Short out the oscillator section of the tuning condenser.

Set the volume control at the maximum position. Attenuate the signal from the signal generator to prevent the leveling-off action of the AVC.

Then adjust the three I.F. trimmers until maximum output is obtained. The location of these trimmers is shown in Fig. 2.

**1650 KC Adjustment**

Set the signal generator for 1650 KC. Turn the rotor of the tuning condenser to the full open position.

If a low capacity antenna is used connect the shielded antenna lead from the chassis through a 150

mmf. condenser to the antenna post of the signal generator. (If high capacity, use 1500 mmf.)

For this and all subsequent adjustments keep the volume control at the maximum position and attenuate the signal from the signal generator to prevent AVC action.

Adjust the trimmer of the oscillator section of the three gang condenser until maximum output is obtained—see Fig. 2 for location of this trimmer.

**1400 KC Adjustment**

Set the signal generator for 1400 KC. Turn the rotor of the tuning condenser carefully until maximum output is obtained.

Adjust the 1st detector and antenna trimmers for maximum output. Do not change the setting of the oscillator trimmer.

**Adjusting Antenna Trimmer**

After the receiver is installed and the car antenna is connected it will be necessary to adjust the antenna trimmer. Tune in a weak signal between 1200 and 1400 KC with the volume control about three-fourths on. Remove the cover of the chassis case. The antenna trimmer is on the center tuning condenser section—see Fig. 2. Turn the adjusting screw of this condenser up or down until maximum output is obtained. CAUTION—Do not turn any of the other trimmer adjusting screws for this adjustment.



MODEL B92(K) Early  
Schematic, Socket

LAFAYETTE RADIO MFG. CO.

Coils, Alignment  
Voltage, Trimmers

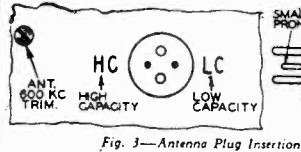


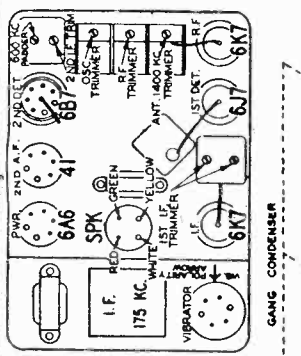
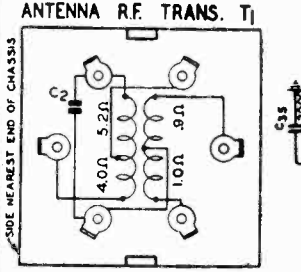
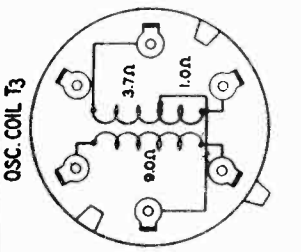
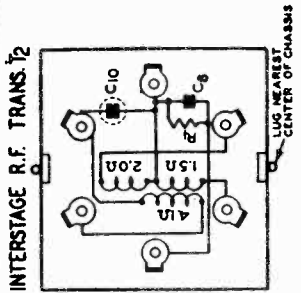
Fig. 3—Antenna Plug Insertion

Adjusting Antenna 600 KC Trimmer

After the receiver is installed and the car antenna is connected, it will be necessary to adjust the antenna trimmer. Tune in a weak signal at approximately 600 KC with the volume control about three-fourths on. Turn the adjusting screw of the antenna

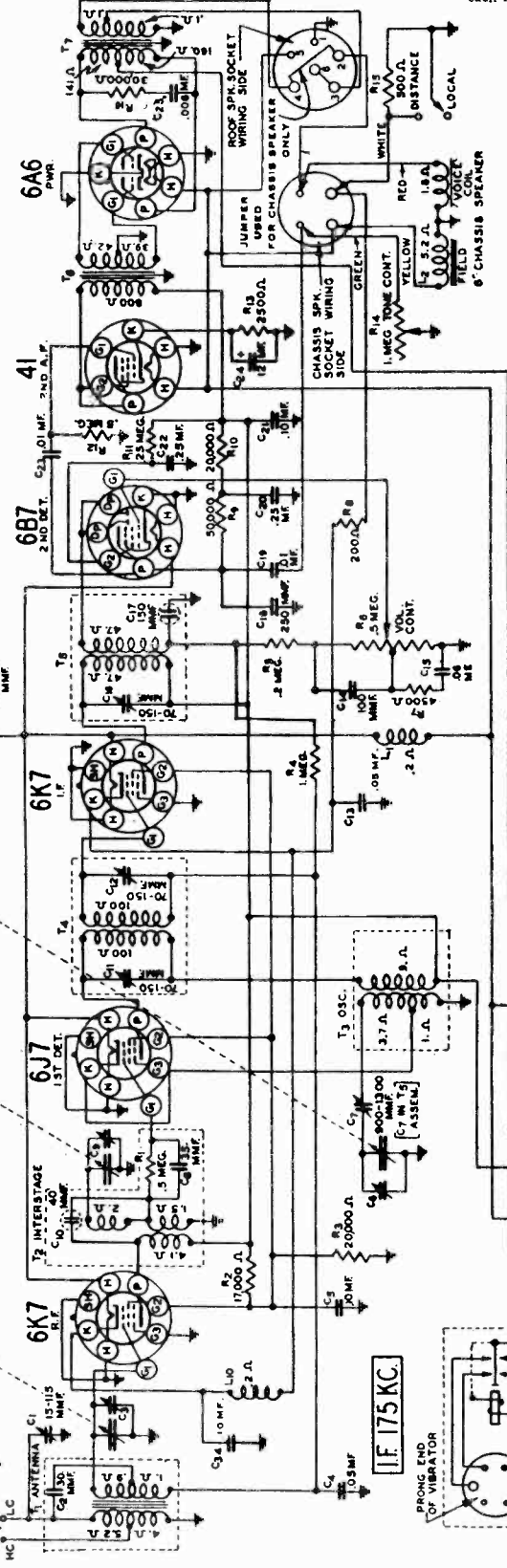
600 KC trimmer up or down until maximum output is obtained. See Fig. 3 for location of this trimmer.

As shown in this illustration, the antenna plug is inserted in one of two ways, depending on whether the car has a high or low capacity antenna. Full instructions are in the installation manual packed with each radio.



**VOLTAGES AT SOCKETS**  
L.D. Check Dist. Dist. Position  
Antenna Plug Withdrawn Battery 6.3 Volts under Load

Type	Function	Across Heater	Plate	Screen	Carbide
Tube			Ground	Ground	Ground
6K7	R.F.	5.6	260	110	3
6I7	1st Det.	5.6	260	110	3
6K7	I.F.	5.6	260	110	3
6B7	2nd Det.	5.6	55	50	30
41	2nd A.F.	5.7	255	55	30
6A6	Pwr.	5.7	275		



**1400 KC Adjustment**  
Set the signal generator for 1400 KC. Turn the rotor of the tuning condenser carefully until maximum output is obtained. Adjust the R.F. interstage and antenna 1400 KC trimmers for maximum output. Do not change the setting of the oscillator trimmer.

**600 KC Adjustment**  
Set the signal generator for 600 KC. Connect the output of the signal generator through a .05 mf. condenser to the control grid of the 6K7 R.P. tube. Turn the tuning condenser rotor until maximum output is obtained. Then turn the tuning condenser rotor back and forth, at the same time adjusting the 600 KC paddler (see Fig. 2) until the peak of greatest intensity is obtained. Reconnect the output of the signal generator to the shielded antenna lead through a 150 mmf. condenser (1500 mmf. if antenna is high capacity). Adjust the 600 KC antenna trimmer to maximum. This trimmer is reached from the outside of the case

**1575 KC Adjustment**  
Set the signal generator for 1575 KC. Turn the rotor of the tuning condenser to the full open position.

**175 KC Adjustment**  
Set the signal generator for a signal of 175 KC. Connect the output of the signal generator through a .05 mf. condenser to the stator of the R.F. interstage section of the tuning condenser. (See Fig. 2 for location of this section.) Connect the ground lead of the signal generator to the chassis ground. Turn the Local-Distance switch to the Distance position and keep it in this position for all adjustments.

**I.F. Adjustment**  
Set the volume control at the maximum position. Attenuate the signal from the signal generator to prevent the leveling-off action of the AVC. Then adjust the three I.F. trimmers until maximum output is obtained. The location of these trimmers is shown in Fig. 2.

**1400 KC Adjustment**  
If a low capacity antenna is used, connect the shielded antenna lead from the chassis through a 150 mmf. condenser to the antenna post of the signal generator. (If high capacity, use 1500 mmf.) The antenna plug must be correctly inserted, dependent on the capacity of the antenna used. Adjust the trimmer of the oscillator section of the three gang condenser until maximum output is obtained—see Fig. 2 for location of this trimmer.

**600 KC Adjustment**  
If a low capacity antenna is used, connect the shielded antenna lead from the chassis through a 150 mmf. condenser to the antenna post of the signal generator. (If high capacity, use 1500 mmf.) The antenna plug must be correctly inserted, dependent on the capacity of the antenna used. Adjust the trimmer of the oscillator section of the three gang condenser until maximum output is obtained—see Fig. 2 for location of this trimmer.